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ABSTRACT OF DISSERTATION

Jacob Fowles

The Martin School of Public Policy and Administration

University of Kentucky

2010

PUBLIC HIGHER EDUCATION GOVERNANCE: AN EMPIRICAL EXAMINATION

ABSTRACT OF DISSERTATION

A dissertation submitted in partial fulfillment of the
Requirements for the degree of Doctor of Philosophy in the
Martin School of Public Policy and Administration
At the University of Kentucky

By

Jacob Fowles

Lexington, Kentucky

Director: Dr. Eugenia Toma, Wendell H. Ford Professor of Public Policy

Lexington, Kentucky

2010

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ABSTRACT OF DISSERTATION

PUBLIC HIGHER EDUCATION GOVERNANCE: AN EMPIRICAL EXAMINATION

Public higher education is a large enterprise in the United States. Total state expenditures for higher education totaled nearly \$152 billion dollars in FY2008, accounting for over ten percent of total state expenditures and representing the single largest category of discretionary spending in most states (NASBO, 2009). The last three decades have witnessed the introduction of hundreds of pieces of legislation across states which make structural changes to state higher education governance systems (Marcus, 1997; McLendon, Deaton, and Hearn, 2007). Despite the ubiquity of state higher education governance change much remains unknown, both in terms of why states choose to enact reforms as well as the implications of state governance arrangements for institutional performance.

This dissertation attempts to fill these critical gaps in knowledge. First, it surveys the historical development of state higher education governance structures and reviews the limited empirical literature regarding the antecedents and impacts of various state approaches to higher education management. Drawing on this literature, the first empirical chapter, utilizing hazard modeling, seeks to uncover the factors associated with state enactment of legislation decentralizing higher education governance. It finds that state fiscal characteristics emerge as strong predictors of decentralization. Specifically, states with greater tax efforts are much less likely to decentralize, while states experiencing real dollar declines in tax revenues are much more likely to decentralize, all else constant.

The second empirical chapter explores the implications of state management of public higher education for institutional degree completion rates. Utilizing a unique, institutional-level dataset comprising 518 public, four-year institutions of higher education in the United States, it finds that, controlling for relevant institutional-level characteristics such as institutional selectivity, mission, and per-FTE student expenditures, inter-institutional competition emerges as a powerful predictor of student degree completion. Institutions operating in more competitive environments—defined as states with less concentrated undergraduate enrollments and states with weaker higher education governance structures—graduate students at higher rates than institutions operating in less competitive environments. The dissertation concludes by

discussing the implications for these empirical findings for policy makers seeking to enhance the efficiency and effectiveness of public higher education.

KEYWORDS: higher education; governance; policy adoption; educational attainment; higher education policy

Jacob Fowles

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April 16, 2010

Date

PUBLIC HIGHER EDUCATION GOVERNANCE:
AN EMPIRICAL EXAMINATION

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To my wife, Millinda. This dissertation stands as a testament of your patience, steadfastness, and support. I could not have done this without you.

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All errors contained herein remain my own.

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CHAPTER 1

INTRODUCTION

Higher Education Governance in Context

Public higher education in the United States is a large enterprise. According to the National Center for Education Statistics, total enrollment at public institutions across the United States totaled nearly 13.5 million in 2007, accounting for nearly 74 percent of enrollments across all sectors. Institutions collectively received over \$152 billion dollars from states in fiscal year (FY) 2008, including nearly \$77 billion in state general fund appropriations. Overall, state expenditures on public higher education represent the largest category of state discretionary spending, accounting for over ten percent of total state expenditures over this time period (National Association of State Budget Officers, 2009). Despite the enormity of public higher education, much remains unknown in terms of both how states reach decisions regarding the balance between institutional autonomy and state control as well as the implications of state regulatory posture for institutional performance. From the perspective of the various stakeholders of public higher education, including students, institutional administrators, the public and state governments, the lack of quantitative empirical evidence regarding these relationships implies that decision making at all levels relies to some extent on assumptions and conjecture, the validity of which remains largely untested.

From an international perspective, public higher education in the United States is highly decentralized, meaning that the institutions in the U.S. enjoy, on average, much greater autonomy and independence from government control than their European counterparts (McLendon & Hearn, 2009). Looking only within the United States, a cursory examination of states reveals that much variation exists in the exact balance of power between states and the public institutions of higher education located within them. Historically, states largely embraced a *laissez-faire* posture toward public higher education, allowing institutions a high degree of formal autonomy. This began to change in the 1950s, a decade which witnessed the introduction of formal state

intervention in public higher education on a large scale due to the expansion and growth of public higher education during this period (McLendon, Hearn, & Deaton, 2006). However, state action along these lines has been quite uneven. While some states have embraced highly centralized management of public higher education, other states have vested power in the individual institutions and curtailed the role of state boards in managing public higher education. Still other states have changed their posture over time, choosing to relax centralized governance structures or, conversely, taking action to further concentrate power with the state. Broadly speaking, much remains unknown in terms of how states determine the appropriate balance between institutional autonomy and state control. The extant literature is largely qualitative, utilizing a case study or comparative case study design of particularly innovative states, leaving questions of generalizability unanswered. Ultimately, as McLendon (2003b) laments, “virtually nothing is known about how or why state governments undertake reforms of their higher education systems” (p. 58).

While not much is known regarding state higher education policy formation and change, even less is known about the impact of state higher education governance on public institutions of higher education and, ultimately, the largest category of stakeholders for higher education: students. Partially to blame for this gap in the literature is the inherent complexity of institutions of higher education as producers of various goods, of which education of undergraduate students remains only one (albeit a particularly vital one, at least from the perspective of students and state governments—the primary external stakeholders of public higher education). Some researchers, in observing the diversity in state higher education governance arrangements across states, have simply assumed that this variation implies that each state has strategically adopted a governance structure which complements its unique environment. While the tautological nature of this axiom seems obvious, the absence of rigorous empirical examination of both the antecedents and impacts of state governance arrangements for higher education leaves much unresolved. This dissertation attempts to fill these critical

gaps in the extant literature through a quantitative examination of the antecedents and impacts of state higher education governance arrangements.

Organization of the Dissertation

Chapter 1 presents the introduction, research questions, context, purpose, and significance of the dissertation. Chapters 2 and 3 combine to summarize the existing knowledge regarding higher education governance in the United States. Chapter 2 surveys the evolution of higher education governance in the United States, beginning with the creation of the first institutions of higher education in the United States during the Colonial era and ending with the wave of governance changes that defines the late 1990s and early 2000s. Chapter 3 provides an overview of the existing literature regarding higher education governance, focusing on two key questions: first, what are the determinants of state higher education governance change? Second, what are the implications of state higher education governance arrangements for public institutions of higher education? As these chapters reveal, limited evidence exists to answer these questions.

Accordingly, Chapters 4 and 5, the two empirical chapters of this dissertation, seek to contribute to the extant literature through quantitative analyses which address these questions. Chapter 4, utilizing hazard modeling, uncovers the factors associated with state adoption of legislation that decentralizes higher education governance, shifting the balance of power in favor of institutions. Chapter 5 assesses the impact of state governance arrangements on student outcomes through a cross-sectional analysis of the institutional graduation rates of public, four-year institutions of higher education in the United States. Chapter 6 concludes this dissertation and includes a discussion of the findings, a summary of the dissertation, conclusions, limitations, implications, and recommendations for future research.

CHAPTER 2

HIGHER EDUCATION GOVERNANCE IN THE UNITED STATES: AUTONOMY AND ACCOUNTABILITY FROM A HISTORICAL PERSPECTIVE

Introduction

States have long struggled with determining the appropriate mechanisms through which to maintain and enhance the accountability of state systems for public higher education. As this review of this historical literature shows, much variation exists in state approaches along these lines which reflects not only evolution in state priorities for higher education as public institutions have faced increased demand from an increasingly diverse student population, but also divergence in consistency within and across states regarding the appropriate role of public higher education at a given time. This chapter provides a historical overview of the development and evolution of state higher education governance arrangements from the initial founding of institutions of higher education in the United States during the Colonial Period through the expansion of public higher education following World War II (WWII) through the beginning of the 21st century.

The Colonial Period to the Civil War: Development of Higher Education in the United States

The first institutions of higher learning in the United States predate the American Revolution. These institutions were generally similar to their European counterparts in structure, particularly the English universities of Oxford and Cambridge (1990). Under this model, ultimate authority for institutional decision making was principally vested in two agencies: a president and a board of trustees (Brubacher & Rudy, 2004). This borrowing of the European model was intentional and often quite explicit: for example, Haskins (1965) notes that the 1764 charter of Rhode Island College granted it “the same privileges, dignities, and immunities enjoyed by the American colleges and European universities” (p. 21). While these early institutions were neither public nor private as

these terms are defined today¹, institutions of that era were widely recognized as afforded a greater degree of freedom far beyond that enjoyed by other public bureaucracies or “creatures of the state” (McLendon & Hearn, 2009; Thelin, 2004).

Historically, some scholars have argued that the colonial period represents the pinnacle of autonomy for American institutions, with some even going so far as to say that institutions enjoyed “complete autonomy” (Pliner, 1966). However, the research of other scholars has cast serious doubt on the validity of this assertion, arguing that institutions, no matter how autonomous they appeared, nonetheless functioned within the context and under the shadow of the colonies in which they resided. For instance, Rudolph (1990, p. 14) notes that Harvard’s charter gave the colonial Massachusetts government some control over the university’s governance, a power that the General Court exercised in removing the university’s president in 1639. Although the charters of other institutions granted them more autonomy from the control of colonial governments, Rudolph (1990) also notes that institutional reliance on public appropriations was not the exception but the rule for many institutions. This was especially true after the American Revolution when the charters issued by the English monarchy were altered, not just to omit reference to English authority but also to more explicitly define institutions as state-controlled (or at least, guided) entities (Thelin, 2004, p. 43).

As America established its independence, a critical difference between higher education governance in the United States and the European model arose as a product of the enumeration of responsibilities granted to the federal government in both Article I, Section 8 and the Tenth Amendment of the U.S. Constitution. Unlike the explicit mandates for the regulation of defense, currency, and commerce, the Constitution makes no similar provision for federal control of higher education. Because of the lack of specific delegation of authority (as well as the Tenth Amendment’s reservation of

¹ Herbst (Whitehead and Herbst, 1986) contends that the appropriate term for institutions of this era is “provincial,” reflecting the institution’s role as a “colony’s or

non-enumerated powers to the states), the United States created no federal body overseeing higher education and, beyond the military service academies, founded no national universities.² Instead, unlike its European counterparts, the individual states were left largely to their own devices in terms of developing and shaping their own systems of higher education.

This difference proved to be especially divisive for the chartering of new institutions. As Thelin (2004) notes, the eighteenth and early nineteenth centuries were demarcated by a rapid proliferation of institutional foundings: Between 1800 and 1860, the number of degree-granting colleges in the U.S. increased nearly tenfold (p. 41-42). However, some debate exists as to the driving force behind this proliferation of institutions. Certainly, much of this growth is attributable to increased demand for higher education, particularly in the South (Thelin, 2004, p. 52; Rudolph, 1990, p. 36). On the supply side, the relatively lax standards for obtaining a charter from state governments were clearly a contributing factor. For example, Thelin (2004) notes that charters were often granted as political spoils by state government officials to reward loyalty (p. 43). The enthusiastic approach to chartering is perhaps best expressed by Rudolph (1990), who states that “College-founding in the nineteenth century was undertaken in the same spirit as canal-building, cotton-ginning, farming, and gold-mining. In none of these activities did completely rational procedures prevail” (p. 48).

As one might expect, the exuberance in state chartering did not always yield successful institutions. In fact, so many universities were chartered by the states and subsequently closed that Brubacher and Rudy (2004) called the era between the Revolutionary and Civil Wars the “forgotten period” of American higher education. Tewksbury’s (1969) seminal work on the subject computed an average institutional mortality rate of 81 percent. While others (Naylor, 1973) argue that Tewksbury overestimates the true

² This is not to say that the foundation of a national university was never considered. Trow (2003) provides an excellent historical overview of the debate surrounding the foundation of a national university, including the fact that George Washington left a sizable donation to the effort in his will.

mortality rate (revised estimates place it somewhere closer to 60 percent), this figure is nonetheless astoundingly high especially when contrasted with the institutional immutability that characterizes the public sector for higher education today. Critically, few charters were accompanied by pledges of public dollars for financial support, a fact that undoubtedly made institutional survival less certain (Thelin, 2004).

Another significant event in the evolution of the relationship between institutions and states that occurred during this period is the *Dartmouth v. Woodward* Supreme Court decision in 1819. In this case, New Hampshire attempted, through legislative action, to gain control over the administration of Dartmouth College by expanding the size of its board of trustees and loading the vacant spots with appointments sympathetic to the desires of the state. While the New Hampshire Supreme Court upheld the actions of the legislature, the U.S. Supreme Court, in their decision, ruled in favor of the college's sovereignty. Their decision upheld the sanctity of the college's charter as a binding contract between the institution and the state that was protected from legislative interference by the U.S. Constitution's Contract Clause (The Oyez Project).

The implications of this decision for the development of higher education in the United States have been widely debated among scholars. The traditional view is that this case was significant because it represents the first clear legal demarcation between public institutions and private ones (Rudolph, 1990; Whitehead & Herbst, 1986). However, a more tempered view suggests that this is an overstatement. Whitehead (Whitehead & Herbst, 1986) provides evidence that the distinction between public and private institutions (at least as the terms are used today) did not arise until the 1870s, much later than *Dartmouth*, although he acknowledges that clearly this distinction did exist—at least for some—at the time of the court's decision. Instead, Whitehead (Whitehead & Herbst, 1986) argues that the court's decision served another critical purpose: It solidified the autonomy of chartered institutions and protected them from legislative tampering. He cites Justice Story's concurring opinion which states that all institutions should be free from legislative control as tangible evidence of the court's intent.

The effects of this ruling are also debated in the literature. McLendon (2003b) argues that *Dartmouth* induced the trend of granting institutional constitutional autonomy as states grew increasingly concerned about the influence of state politicians over institutional direction and management. Brubacher (1967) argued that *Dartmouth* caused a legislative backlash in which states revised their chartering practices to favor the creation of public institutions—institutions which vested the legislature with a high degree of control (p. 244). Rudolph (1990) reaches the opposite conclusion, arguing that *Dartmouth* “checked the development of state universities for half a century” and promoted the founding of more private schools by religious and secular groups instilled with confidence in their ultimate ability to retain institutional control (p. 211). Finally, Thelin (2004) argues that the enthusiasm for institutional building, which was high before *Dartmouth*, remained largely undiminished in its aftermath. Trow (1988) echoes this sentiment, arguing that *Dartmouth*, combined with the limits on federal control of higher education built into the Constitution, set the groundwork for the development of an entrepreneurial and competitive market for higher education reflective of America’s faith in the powers of individual choice and free markets.

The Civil War to World War II: Diversification and Fragmentation

The human and capital costs of the Civil War had a profound effect on demand for higher education in the United States. The overall trend following the war was one of ever-increasing demand for higher education: Total enrollment in higher education in the United States more than doubled from 1870 to 1890, and then more than doubled again to 355,000 by 1910 (Hofstadter & Hardy, 1952). However, this growth was highly uneven: While the East, West, and Midwest enjoyed unprecedented gains in terms of enrollments, colleges in the South were perhaps best characterized as “destitute,” lacking assets, facilities, and perhaps most critically, students (Stetar, 1985).

Additionally, the expansive and evolving nature of the American economy in this era caused many to question the value of the traditional liberal arts education provided by the Oxbridge model, instead arguing that higher education should include more

practical vocational training in fields such as the mechanical arts and farming, among others. This criticism of higher education became more acute in the aftermath of the Civil War when state economies, especially in the Southern states, struggled to overcome population loss and capital decimation. In 1850, more than ten years before the Civil War, Francis Wayland, the president of Brown University, noted that at that time there existed no institutions “designed to furnish the agriculturalist, the manufacturer, the mechanic, or the merchant with the education that will prepare him for the profession to which his life is to be devoted” (Lee, 1963, p. 23). However, within a generation, changes to the landscape for higher education in the United States would render Wayland’s criticism moot.

This expansion of mission in this era is perhaps best exemplified by the passage of the Morrill Land-Grant College Act of 1862. Under this Act, the federal government gave nearly eleven thousand square miles of federal land to the states to sell for the support of colleges and universities. Continuing the federal government’s *laissez-faire* approach towards higher education, the Act included very little stipulation regarding how the funds were to be spent by the states. The major requirements were that funds were to be spent to support an institution teaching agriculture and the mechanical arts and that funds were to constitute an endowment to said institutions to be maintained in perpetuity (Lee, 1963). As such, the states enjoyed a great deal of discretion in determining beneficiaries. Some states used the money to found new institutions while others rewarded existing institutions, including a few denominational institutions and many institutions that today would be defined as “private” (Levine, 1993; Thelin, 2004).

The Morrill Act also yielded critical changes in the relationship between states and institutions. Before Morrill, public appropriations to universities were “simply not part of the vocabulary of the era” (Thelin, 2004, p. 72). However, the stipulation that Morrill funds constitute an endowment in perpetuity meant that states were required to provide public funds for capital construction and, critically, capital maintenance. As such, a noteworthy consequence of the Morrill Act was that it virtually forced states to

make regular and significant appropriations to support higher education, especially states that used Morrill funds to found new institutions. Thelin (1982) provides evidence of the impact of the Morrill Act on state funding for higher education: By 1908, California, Illinois, Michigan, and Wisconsin made annual appropriations to their universities in excess of one million dollars (as cited in McLendon, 2003).

A second consequence of the Morrill Act of 1862 (and the subsequent Morrill Act of 1890, which extended the act to include the former Confederate states) was an increased level of fragmentation in the provision of higher education in the various states. Thelin (2004) notes that coordination and cooperation between institutions was largely nonexistent following the passage of the Morrill Act as institutions rushed to integrate technical education and other high-demand programs into curriculums. Programmatic duplication across institutions led to arguments about the appropriate structure for provision of these new programs. This fragmentation was only enhanced as institutions battled for Morrill funding and land-grant status, creating heated rivalries that played out in public debate and on the floor of state legislatures.

Further, the second Morrill Act required “a just and equitable” division of funds received under the Act to be dedicated to education of “colored students,” a requirement designed to prompt the Southern states to provide higher education for black students. Before 1890, only three predominantly black schools received any land-grant funds. Immediately following the passage of the second Morrill Act, seventeen of the nineteen Southern states established dual public land-grant institutions in order to retain eligibility for Morrill funding (Borwn, 1999, p. 3).

Additionally, the long-standing trend of issuing charters as political spoils continued into the late nineteenth century with little regard to institutional purpose or state need. As Glenny (1959) notes, “The successful politician proved his merit by bringing home an insane asylum, a prison, or a college. Frequently it made little difference which” (p. 13). Expansion was further complicated by the fact that ambitious institutions became increasingly adept at lobbying for state funds, relying on influential alumni and local

politicians to secure public dollars. Many state legislatures realized that “the assumption that lay [institutional] governing boards would protect the public interest was only partially correct” (Berdahl, 1971, p. 27). While trustees generally seemed to exercise due caution in spending public dollars, they also seemed to be increasingly influenced by institutional ambitions. However, state legislators of the day largely possessed neither the access nor the ability to digest objective, technical data about institutions to inform their decisions regarding institutional chartering or funding.

As a result, many organizations, such as the American Council on Education and the Carnegie Foundation for the Advancement of Teaching, became advocates for greater state control and oversight of higher education, arguing that the efficiency gains from consolidation outweighed the potential drawbacks of loss of institutional autonomy (Novak & Leslie, 2000). Heeding this call, several states undertook efforts to introduce new oversight and consolidate control over higher education. Initial efforts occurred in Oklahoma and Georgia, which simply placed smaller institutions under the supervision of the board of the land-grant college. However, this arrangement was ultimately found to be insufficient as the institutional boards of the land-grant institutions were largely unwilling or unable to cooperate with subsidiary institutions in a productive or equitable manner (Glenny, 1959).

As a further step, several states abolished all institutional boards, creating consolidated boards empowered with control over the internal administration of all individual institutions. The first state to adopt this arrangement was Florida in 1905, followed by Iowa in 1906. By the beginning of the Great Depression, eleven states had adopted this approach (Halstead, 1974). These arrangements were popular with legislatures for several reasons. First, they promised to eliminate much of the political conflict regarding state appropriations as legislatures could simply make a lump-sum appropriation to the governing board to distribute among its constituent institutions. Second, they promised to enhance overall system productivity and efficiency by coordinating the degree offerings across institutions and reducing duplication and

overlap. Third, they promised to enhance public accountability of higher education by vesting control of board appointments with legislatures rather than with the institutions themselves as well as providing legislators with a single point of contact within the system for higher education.

As Halstead (1974) notes, these goals were not always achieved in practice. A few boards were particularly effective: Berdahl (1971) notes that Georgia's governing board, which was created in 1931, closed ten institutions in order to reduce duplication of degree offerings. However, the majority were much less successful, for a variety of reasons. States faced considerable legal obstacles to making such drastic changes to institutional governance. Additionally, institutions resisted the adoption of consolidated governing boards and employed creative ways to circumvent their authority, viewing them as an encroachment on essential institutional autonomy. Finally, many states, especially those experiencing fiscal prosperity, simply seemed to lack the political willpower to introduce such drastic change to higher education. Ultimately, early efforts to coordinate and control state higher education systems were less than effective, leaving "diversity and independence to dominate American higher education until after World War II" (Halstead, 1974, p. 7).

World War II to the 1960s: Expansion and Evolution of Higher Education Governance

While some states experimented with higher education governance prior to WWII, it was only in the aftermath of the war that state efforts to control or coordinate higher education were truly undertaken in earnest in most states. McLendon's (2003b) review of the literature synthesizes eight distinct trends that contributed to increased state intervention into higher education: 1) increases in institutional complexity; 2) increases in the demand for higher education, due in large part to the popularity of the G.I. Bill; 3) increases in the political and social scrutiny of higher education; 4) increases in the demands placed on higher education by the federal government; 5) an overall shift in state governance approaches towards centralization and control; 6) the proliferation of the executive budget which provided governors with tighter control over state

government expenditures; 7) increases in legislative professionalization; and 8) an overall increase in competition between institutions for resources, including state funding (pp. 67-68).

As a result of these trends, states became much more systematic in their efforts to shape and steer public higher education. In 1939, 33 states reported having no state agency for higher education. Thirty years later, this number was reduced to two: Delaware and Vermont (Berdahl, 1971). As many authors have recognized, much variation existed between the governance arrangements adopted by states (McGuinness, Epper, & Arredondo, 1994). However, researchers largely agree that three common approaches emerged among state efforts to steer public higher education: voluntary coordination, coordinating boards, and consolidated governing boards.

Among the three types, consolidated governing boards represent the most authoritative form of coordination. Consolidated governing boards supplant institutional governing boards and are empowered with all duties previously assigned to institutional boards, including “the management and control of finances and property, conferring of degrees, faculty personnel matters, and courses of instruction” (Glenny, 1959, p. 35).

Additionally, the absolute nature of the power granted to consolidated governing boards means that they are also responsible for coordination across institutions, a power that in some states is expressly delegated and in others implied (Glenny, 1959). Consolidated governing boards have historically been exclusively composed of members appointed by state governments representing the public interest, although in a few cases boards also include members representing institutional interests (Berdahl, 1971).

Voluntary coordination represents the opposite end of the spectrum. Under this arrangement, institutional representatives (typically institutional presidents or members of institutional governing boards) meet more or less informally to coordinate institutional policies. While many states facilitate regular meeting schedules (often by statutorily requiring meetings of institutional officials at regular intervals), Glenny (1959)

notes that, in other states, voluntary coordination is of an ad hoc nature, meeting only to address contingencies as they arise. In many states, voluntary coordination is inherently linked to the budgeting process: Institutional representatives meet to agree upon a unified budget request that is presented to the legislature. Critically, voluntary coordination necessarily contains no impetus for cooperation beyond institutional self-interest.

Falling somewhere between these two extremes are coordinating boards. Coordinating boards are generally created with very specific enumerated powers to coordinate state public higher education and have no authority over the governance of individual institutions. Unlike consolidated governing boards, coordinating boards are superimposed on existing governance patterns rather than supplanting them.

Wide variation exists among states as to the extent of the powers enumerated to coordinating boards by states. Researchers generally recognize two types of coordinating boards: advisory coordinating boards and regulatory coordinating boards (Berdahl, 1971; Glenny, 1959; Paltridge, 1965). As one might expect, the difference between these two board types is largely in the relative strength of their enumerated powers. As McGuinness (McGuinness, et al., 1994) notes, advisory and regulatory coordinating boards differ as to the specific enumeration of their powers along critical dimensions including the review of budgets, the role of the board in making budgetary recommendations to the state and the review of new and existing institutional academic program offerings. Generally, regulatory boards have coercive powers in these areas while advisory boards are empowered only to make recommendations that institutional governing boards can choose to heed or ignore. However, much like the powers enumerated to the federal government, the power of a coordinating board is subject to interpretation, leading to subtle *de facto* differences in board powers across states and over time. Moving beyond this dichotomy, coordinating boards also vary as to their membership. Some coordinating boards are composed exclusively of public members while others include significant institutional representation (Berdahl, 1971).

The following table, which originally appears in Paltridge (1965), conveys the evolution of state approaches toward higher education governance from the end of the Great Depression until 1965.

Table 2-1: State Higher Education Governance Systems, 1940-1965*

Organization type	1940	1950	1960	1965
No organization	33	29	18	6
Voluntary Association	0	2	6	3
Advisory Coordinating Board	1	1	5	13
Regulatory Coordinating Board	1	2	4	11
Consolidated Governing Board	15	16	17	17

*Between 1960 and 1963, three states discontinued voluntary coordination while three other states adopted it.

As this table shows, the post-WWII era, argued by many to be the era of the emergence of systematic higher education governance in the United States, is perhaps more appropriately labeled the era of the coordinating board. Growth in the utilization of the consolidated governing board was largely nonexistent; rather, the states with these governance systems adopted them in the period between the Great Depression and World War II. Similarly, a few states experimented with voluntary associations during this period (most notably Illinois, Indiana, Ohio, and Colorado); however, for most states, voluntary associations represented a brief intermediary between the absence of organization and the adoption of a more formal governance structure (Moos & Rourke, 1959).

In contrast, coordinating boards experienced wide adoption in the 1960s following a relatively slow start that began with Kentucky's creation of the first coordinating board in 1934 (Halstead, 1974). The literature points to several causes for the popularity of coordinating boards in this era. First, coordinating boards could be created and vested with limited statutory power, leaving institutional governing boards largely undisturbed and circumventing the need for serious statutory reform or, in the case of a few states, constitutional amendment (Glenny, Berdahl, Palola, & Paltridge, 1971). Second, coordinating boards were adopted in many states as a compromise between voluntary

associations, which state governments viewed as ineffective in protecting the public interest, and consolidated governing boards, which institutions viewed as overly intrusive. As Glenny et al. (1971) discuss, coordinating boards were seen as functioning in the “no-man’s-land between higher education and the state government,” balancing the interests and needs of both parties; as such, they were often more politically palatable than more extreme governance arrangements (p. 18).

The 1970s: Maturation and Reorganization

The 1970s were demarcated by an increased federal intervention into higher education which frequently led to expansion of the scope of authority of state higher education governance systems. McGuinness (McGuinness, et al., 1994) notes that this intervention was accomplished through four changes passed as part of the Higher Education Act Amendments of 1972 and its later amendments. First, the federal government forced states to increase oversight of higher education by tying eligibility for federal student aid to state licensure of institutions. Second, the federal government expanded need-based aid for states, awarding matching grants to supplement state appropriations for need-based aid. This dramatic increase in funding prompted many states to either create new agencies for management of aid programs or delegate the authority to manage these programs to the existing state board for higher education, thereby expanding the scope of the board’s authority. Third, state eligibility for certain federal dollars required states to engage in long-term planning. While many states had delegated long-term planning responsibilities to their coordinating or governing boards, these new federal requirements carried specific requirements for the composition and duties of boards that conflicted with existing governance membership in many states, leading many to consider changes in governance to ensure eligibility. Finally, changes in federal Stafford loan programs led many states to develop state guarantee agencies in order to ensure eligibility for this program, expanding the state government’s role in facilitating financial aid for students.

Additionally, the 1970s represent the first decade since the Civil War that did not experience a significant expansion in demand for higher education. As such, many state governments became increasingly concerned with system efficiency and maximizing the return of tax dollars invested in public higher education. In some states, this concern translated into increases in the authority of state boards and reductions in institutional autonomy. McLendon's (2003) review of the literature found this action to be consistent with the recommendations made in much of the literature of the day, although he notes that these recommendations were largely made in spite of a "notable absence of empirical research on the consequences of different regulatory relationships" (p. 80). However, other scholars argued that states were becoming heavy handed in their management of public higher education, worrying that coordinating boards were shifting from their position as objective intermediaries between states and institutions to more closely resemble "just another agency of state government" (Glenny & Daglish, 1973, p. 141). Despite the concerns, the overall trend in governance change during the 1970s was one of expansion of the scope and authority of state boards. During this time period, seven states enhanced the power of their coordinating boards while two states abandoned their coordinating board structure and created consolidated governing boards (McGuinness, et al., 1994).

The 1980s and 1990s: Decentralization and Debate

The 1980s and 1990s were an era of renewed debate regarding the appropriate role of states in steering public higher education. McGuinness (McGuinness, et al., 1994) notes that much of this discussion was prompted by increased state and public concerns with the quality of the education provided by state public higher education systems. Overall, this concern translated in many states into increased centralization of authority and decreases of institutional autonomy, especially in the 1980s. Marcus (1997) notes that, of the 14 states that enacted governance reform in the 1980s, 12 decreased institutional autonomy and gave greater control over public higher education to state boards. Nebraska abandoned its planning commission in favor of a new regulatory coordinating board while Colorado and Washington replaced existing coordinating boards with

stronger ones. In Texas and Maryland, legislation consolidated authority by combining existing boards into a single agency.

Similarly, concern about institutional quality in some states simply led to increased regulation and monitoring of institutions, resulting in a *de facto* reduction in institutional autonomy. McGuinness' (McGuinness, et al., 1994) survey revealed that, by 1990, more than two thirds of states had implemented some form of system-wide student assessment. Some states simply expanded the scope of the data that institutions were required to submit to state boards beyond finance and enrollment to include measures of student achievement such as dropout and graduation rates. Others went farther, implementing standardized achievement tests similar to those given to primary and secondary students (Ewell, 1985). A few, such as Florida, even went so far as to make passage of this test a requirement for upper classman status at public universities.

However, in contrast to the long-standing trend toward increased centralization, a few states chose to decentralize their higher education systems during the 1980s, granting institutions additional autonomy (Marcus, 1997). New Jersey granted its nine state colleges additional control over matters of operations and personnel, increasing their control over the "day-to-day affairs" of the campuses (Marcus, 1997, p. 401). West Virginia abolished its consolidated governing board and established two new governing boards: one for universities and a second for state colleges, community colleges, and technical institutes, recognizing the differing missions of these two groups of institutions. McLendon's (2003) survey of the literature attributes the decentralizations of the 1980s to the economic downturn during this time which created "downward pressure on state budgets and on higher education funding levels in particular" (p. 82).

While the trend towards centralization continued in many states in the 1990s, several authors note that decentralization became much more common in this era (Marcus, 1997; McGuinness, et al., 1994; McLendon, 2003b). Three states (Illinois, Massachusetts, and New Jersey) dissolved long-standing governance structures and

adopted less centralized versions. Illinois replaced multi-institution governing boards with individual governing boards. New Jersey replaced its powerful regulatory coordinating board with a weaker one, transferring much of the power formerly reserved for the coordinating board to the institutions themselves. Finally, Massachusetts dissolved its powerful Board of Regents and divided its powers between institutional boards and a newly-created coordinating board (Marcus, 1997).

Additionally, many states adopted smaller changes which had the effect of increasing institutional autonomy. Connecticut allowed its institutions to submit budget requests directly to the governor. Virginia granted institutions additional control over institutional operations. South Carolina added institutional representation to the state's coordinating board. Oregon allowed its institutions greater control over personnel, purchasing, and contracting (Marcus, 1997). Hawaii's legislature voted to allow the university system to retain tuition revenues rather than remit them to the state (McLendon, 2003).

Unlike the decentralizations of the 1980s, the causes of the decentralizations of the 1990s are much more difficult to identify. McGuinness (McGuinness, et al., 1994) argues that, like the 1980s, declining economic conditions functioned as catalysts for the decentralizations of this period. McLendon (2003) argues that the decentralization of higher education governance in the 1990s is simply reflective of a larger trend in government towards decentralization and deregulation (Osborne & Gaebler, 1992).

Conclusion

As this historical overview has demonstrated, governmental approaches to the management of public higher education have varied widely, both across states and over time. Synthesis of the historical trends suggest little in terms of overarching themes; while some states have moved in a consistent direction towards centralization or decentralization over time, the modal state is much less consistent and much more difficult to neatly categorize. In these states, the posture of government in regard to public higher education varies, suggesting that states are perhaps myopic in their

approaches, reacting to short-term contingencies with little consideration for long-term stability. As the next chapter reveals, this historical trend continues to define management of state public higher education today. Ultimately, much remains unknown regarding how states approach management of public higher education. Further, little is known about the implications for these choices on system performance, leaving state governments with little to guide them in formulating effective and efficient policies.

CHAPTER 3

ANTECEDENTS AND IMPACTS OF STATE HIGHER EDUCATION GOVERNANCE: A REVIEW OF THE LITERATURE

Introduction

As many researchers have noted, much variation exists in state approaches to oversight of public higher education (Berdahl, 1971; McGuinness, et al., 1994). In spite of this rich and varied history, the relationship between states and public institutions of higher education remains largely understudied (McLendon, 2003b). What drives the differences in governance approaches observed both across states and over time? Does the governance structure adopted by a state impact institutional actions and outcomes? A growing body of theoretical and empirical literature broadly suggests that governance structures impact bureaucratic performance, although relatively little of this literature specifically deals with higher education governance (Knott & Payne, 2004). This chapter provides a review of the extant literature relating to the antecedents and impacts of state management of public higher education.

Higher Education Governance: A Principal-Agent Perspective

In its most basic conception, principal-agent theory, building on the neoclassical economic theory of the firm, deals with the contract between a principal and an agent in which the agent is empowered to act on behalf of the principal. A problem arises when “(a) the desires or goals of the principal and the agent conflict and (b) it is difficult or expensive for the principal to verify what the agent is actually doing” (Eisenhardt, 1989, p. 58). As Lane and Kivisto (2008) note, the ultimate question becomes how to “empower an agent to fulfill the needs of the principal, while at the same time constraining the agent from shirking on their responsibilities” (p. 142). Scholars have adapted this theoretical framework to studies of governments, modifying the explicit contract utilized by the pure economic application to an implicit contract which

accompanies the creation of a bureaucratic organization or a legislative appropriation (Lane, 2007).

Moe (1984) argues that “the whole of politics is structured by a chain of principal-agent relationships” (p. 765). Perhaps nowhere is the axiom appropriate than within higher education governance. First, there exist clearly demarcated differences in preferences between institutions and states. States invest public dollars into higher education primarily as a means to increase the state’s “educational capital”—the number of skilled, knowledgeable people in the state’s workforce (Ewell, Jones, & Kelly, 2003). As such, states expect that institutions will strategically utilize public dollars in the most productive and efficient manner possible to maximize returns on the state’s investment. Typically, this translates into expectations for high quality teaching and better student experiences while maintaining low tuition prices (Knott & Payne, 2004; Payne & Roberts, 2004).

A large vein of literature generally agrees that institutions of higher education seek to maximize prestige, although this assumption is most applicable to research-extensive and intensive universities (Brewer, Gates, & Goldman, 2004; Garvin, 1980; James, 1986; Thompson, 1981). As Lane and Kivisto (2008) discuss, prestige is important for both monetary and non-monetary reasons:

[Prestige] is highly associated with good quality and good quality is associated with effective and expensive educational and research services. Further, possessing a good reputation enhances a university’s social standing in the larger academic community. Prestige is also important because it contributes to the financial survival of the university. By developing a reputation as a prestigious institution, the market area of a university is likely to be expanded. (p. 160)

Melguizo and Strober (2007) note that prestige in higher education leads to the “Matthew effect”—to those that have, more is given (p. 637). Prestigious institutions are more likely to attract top faculty, the brightest students, and the biggest donors, all of which only serve to reinforce and further enhance institutional prestige. Critically, as James (1986, 1990a) notes, the pursuit of prestige frequently leads to shirking (at least from the perspective of external stakeholders) in the form of cross-subsidization in

which institutions transfer resources from low-prestige activities, such as undergraduate education, to higher-prestige activities, such as graduate education and research—activities that in the eyes of some policymakers represent a violation of the implicit contract which accompanies the appropriation of public dollars to institutions.

Second, higher education production is characterized by information asymmetry: Institutions of higher education know much more than do state governments regarding the true costs of education production and the quality of education being provided. This asymmetry problem is compounded by the fact that higher education is largely an “experience good” which cannot be properly evaluated until after purchase; indeed, it may be years after degree completion before an individual has sufficient information to evaluate whether the investment in higher education has paid sufficient labor market dividends to offset the expense incurred (Nelson, 1974). States face similar challenges in accurately gauging the returns to investment of public dollars into higher education because of the inherent difficulty in reaching consensus on the appropriate outcomes through which institutional performance should be measured. Heller (2004) attributes this to two primary factors: the ambiguous nature of institutional goals and the difficulty in practice in establishing accountability based on these goals.

Scholars have long struggled to catalogue the benefits of higher education, for a variety of reasons. While a number of studies show that degree attainment has direct and measurable economic impacts that accumulate to the individual, researchers have long argued that at least some of the returns to higher education are social and cultural in nature and accrue not only to the individual who obtains the degree but also to the public at large (Hearn & Holdsworth, 2002). Accordingly, Table 3-1 below, adapted from a report issued by the Institute for Higher Education Policy (1998), categorizes the outcomes of higher education along two dimensions: the nature of the benefits and to whom the benefits accrue.

Table 3-1: The Outcomes of Higher Education

	Public	Private
Economic	Increased Tax Revenues Greater Productivity Increased Consumption Increased Workforce Flexibility Decreased Reliance on Public Support	Higher Salaries and Benefits Employment Higher Personal Savings Improved Working Conditions Personal and Professional Mobility
Social	Reduced Crime Rates Increased Charitable Giving Increased Quality of Civic Life Social Cohesion/Appreciation of Diversity Improved Ability to Adapt to Technology	Improved Health and Life Expectancy Improved Quality of Life for Offspring Better Consumer Decision Making Increased Personal Status More Hobbies and Leisure Activities

While there is little disagreement about these objectives in principle, Heller (2004) notes that many outcomes of higher education are both difficult to measure and often impossible for higher education to achieve unilaterally, making effective and efficient accountability difficult in practice. Unlike primary and secondary education, there exists no comprehensive, systematic test which measures the value accrued to students by higher education attainment (Eykamp, 1995). While many states have adopted performance indicators to gauge the efficiency and effectiveness of public higher education systems, these approaches are often overly simplistic and are seen by many in higher education as overly intrusive (Hearn & Holdsworth, 2002). As Toma (1990) laments, “Education is a good in which the inputs are often used as measures of output, because of the difficulty in measuring the latter” (p. 3). This is a statement that is borne out by the ranking criteria utilized by such high profile organizations as Barron’s and *U.S. News and World Report*, which focus on such metrics as average ACT and SAT scores of matriculating freshman and admission selectivity.

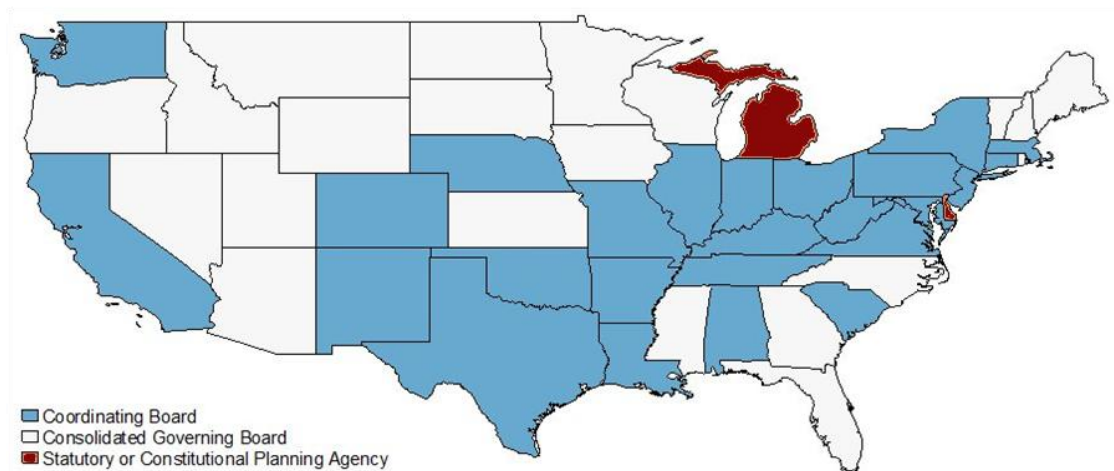
An Overview of State Approaches to Higher Education Governance

Glenny and Bowen (1977) argue that “state intervention in the affairs of higher education takes place in almost infinite ways” (p. 17), a statement that reflects the idea of states as laboratories of policy experimentation (Dye, 1990). However, much

empirical work has recognized commonalities in state approaches toward higher education governance (Berdahl, 1971; Glenny & Bowen, 1977; Lowry, 2001b; McGuinness, et al., 1994). Primarily, as McLendon (2003a) notes, state control of public institutions of higher education in most states has been achieved through the creation of statewide boards of higher education. These boards are charged with maintaining consistency between institutional actions and state priorities (Knott & Payne, 2004), although the specifics of the range and degree of authority they are granted over institutions varies across states.

The literature generally recognizes two broad types of state boards: consolidated governing boards and coordinating boards. Figure 3-1 below, utilizing data collected by the Education Commission of the States (ECS) and supplemented with data from the State Higher Education Executive Officers (SHEEO), displays the configuration of state higher education governance systems as of 2007, the most recent year for which complete data are available.

Figure 3-1: State Configurations for Higher Education Governance*



*Alaska and Hawaii (not pictured) both employ consolidated governing boards.

As this figure reveals, there is much variation across states regarding governance structures for higher education. Twenty-three states employ consolidated governing boards; 25 states employ coordinating boards; and two states have only statutory or constitutional state planning agencies. Additionally, two states (Alaska and New

Hampshire) employ both a consolidated governing board as well as a second board of a different type: Alaska has a statewide coordinating board, while New Hampshire has a statutory planning agency. For the current purpose, a state with boards of both types is coded as having a consolidated governing board.

Consolidated governing boards are the more powerful form of higher education governance utilized by states. They are empowered with both the coordinating functions enjoyed by coordinating boards as well as the day-to-day management of institutions, including management and control of finances, degrees, personnel, and property (Glenny, 1959). Typically, consolidated governing boards are formed by dissolving all other institutional-level organizational structures such as boards of trustees or institutional governing boards. As such, they are the sole entity charged with control of a state's system for public higher education (Berdahl, 1971). Among states employing consolidated governing boards, nine organize all public higher education under a single governing board; conversely, 14 states have two consolidated governing boards with the most frequent division of authority occurring between management of two-year and four-year institutions (McGuinness, 2003).

The less powerful form of higher education governance (in terms of absolute authority and control over institutions) utilized by states is the coordinating board. Coordinating boards work alongside institutional governing boards and are created with very specific enumerated powers which give them authority over issues of state coordination of higher education and prohibit their involvement in the governance of individual institutions. Coordinating boards largely focus on issues such as credit transfer, programmatic duplication across institutions; as such, some have suggested that the role of the coordinating board is to represent state interests and counterbalance institutional ambitions if they run counter to statewide priorities (Millett, 1975).

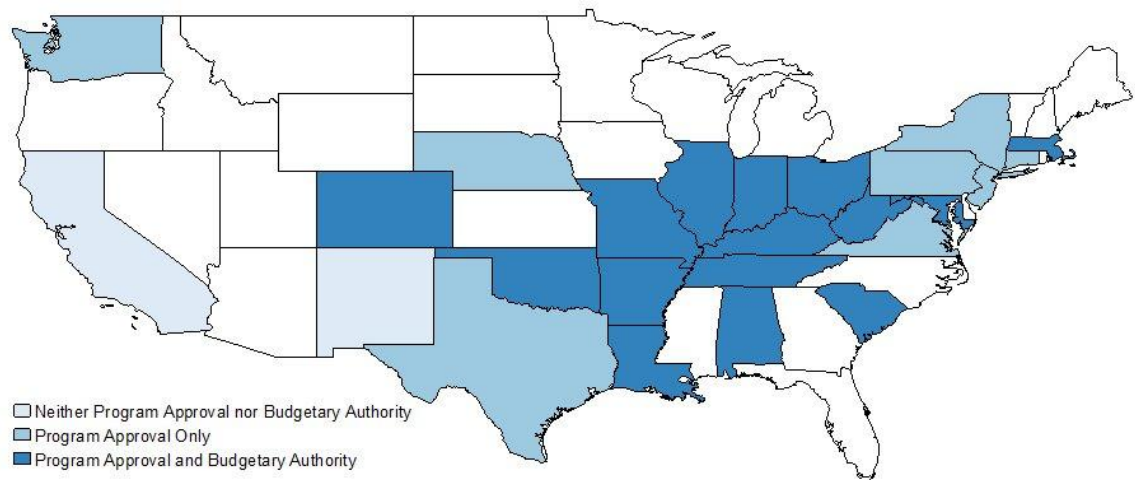
Following the nomenclature developed by Paltridge (1965) and Berdahl (1971), researchers have generally recognized two types of coordinating boards that are distinguished by whether or not the board enjoys institutional program approval

authority. As this perhaps suggests, advisory coordinating boards lack program approval authority. These boards are largely relegated to “reviewing and recommending” and lack coercive power along this dimension (McGuinness, et al., 1994; McLendon, 2000). Alternatively, regulatory coordinating boards are typically empowered with ultimate control over institutional academic programmatic offerings, frequently enjoying the power both to approve new programs and review and eliminate existing ones. Additionally, most states with regulatory coordinating boards have also granted the board some authority over the budgeting process, although the extent of the board’s control over budgeting varies. Strong regulatory boards submit a unified budget request to the legislature and thereby enjoy a high degree of control over institutional budgets. Weaker regulatory boards simply have the authority to review institutional budgets and make recommendations to the legislature but lack ultimate control over institutional budgetary requests.

Glenny (1959) likens the relationship between regulatory coordinating boards and institutions to that of the federal government and the states: In both, all powers are reserved for the lower level of government except those specifically enumerated to the higher (p. 39). As he notes, the relationship between institutions and regulatory boards is often a complex one which hinges on an implicit, shared understanding of the boundaries of authority of both parties—an understanding which, similar to the relationship between the federal government and the states, may or may not exist at a given time.

Figure 3-2 below, again drawing on data collected by the ECS and supplemented by data from SHEEO, displays the differences in the authority of coordinating boards across the states.

Figure 3-2: Authority of State Coordinating Boards



As the figure reveals, there exists a large degree of difference in the powers granted to coordinating boards by states. Only two states, California and New Mexico, have advisory coordinating boards—boards which enjoy very limited authority over both programmatic offering and institutional budgets. Fifteen states have strong regulatory coordinating boards that are empowered with both program approval authority and ultimate budgetary authority. Eight states have weaker regulatory boards that have more limited budgetary authority or, in the case of New York and Pennsylvania, have no role in the budgeting process.

Additionally, researchers have historically recognized a third governance arrangement beyond the governing and coordinating boards: voluntary coordination (Berdahl, 1971). Under this arrangement, states facilitate coordination among institutions, either formally or on an informal basis. Critically, however, this arrangement carries no formal impetus for coordination beyond institutional self-interest. Berdahl's (1971) study of governance structures reveals that voluntary coordination peaked in popularity in the early 1960s as many states adopted this method of coordination as a temporary measure until more explicitly codified governance arrangements could be created. As such, by 1970 voluntary coordination had largely been abandoned by states. Currently, only Michigan and Delaware exclusively employ this arrangement. Michigan's State Board of Higher Education is granted very limited powers to make recommendations to

the legislature by the state's constitution. Similarly, Delaware's statutorily-created Higher Education Commission's authority extends only to data collection and reporting as well as oversight of interstate agreements. Additionally, McGuinness (2003) notes that four states have statutory, constitutional, or voluntary planning agencies which supplement formal governance structures.

Berdahl (1971) tracks the evolution of state higher education governance structures in the states from 1940 to 1970, a period which roughly corresponds to the infancy and adolescence of state higher education governance. He finds that, over this time period, many states embraced wholesale change in their approach to governance: While 33 states had no state agency for higher education in 1940, this number had decreased to only two by 1969 (p. 35). Similarly, over this time period, states generally displayed a great willingness to experiment with alternative governance arrangements. For example, during the 1960s alone, seven states that had previously adopted either a coordinating or governance board chose to abandon their existing arrangement and adopt an entirely different one.

However, in recent years, state higher education governance has reached a period of relative maturity in which change has largely become less extreme and more nuanced. While a few states have adopted broad and sweeping governance changes in the last couple of decades (i.e. Florida in the early 2000s and New Jersey in the early 1990s), researchers generally agree that the most recent wave of changes—at least since the 1970s—have occurred largely incrementally or on the margins, tweaking existing governance systems rather than supplanting existing governance arrangements with wholly new systems.

However, this is not to say that states have lost their appetite for experimentation and change in their approach to managing public institutions; in fact, quite the opposite is true. Marcus (1997) identified over 50 proposals introduced by states to reform higher education governance in the early 1990s. McLendon and Ness (2003) similarly found over 100 unique legislative efforts to modify higher education governance during the

late 1990s. The legislative databases developed and maintained by the Association of Governing Boards (AGB) and the ECS confirm that this trend has continued into the 2000s, cumulatively identifying more than 150 pieces of legislation introduced by states that impact state higher education governance in the early 2000s alone. While the vast majority of these introduced pieces of legislation did not survive the legislative process, they nonetheless serve to convey the fact that policymakers in many states still struggle to find harmony between institutional autonomy and state control.

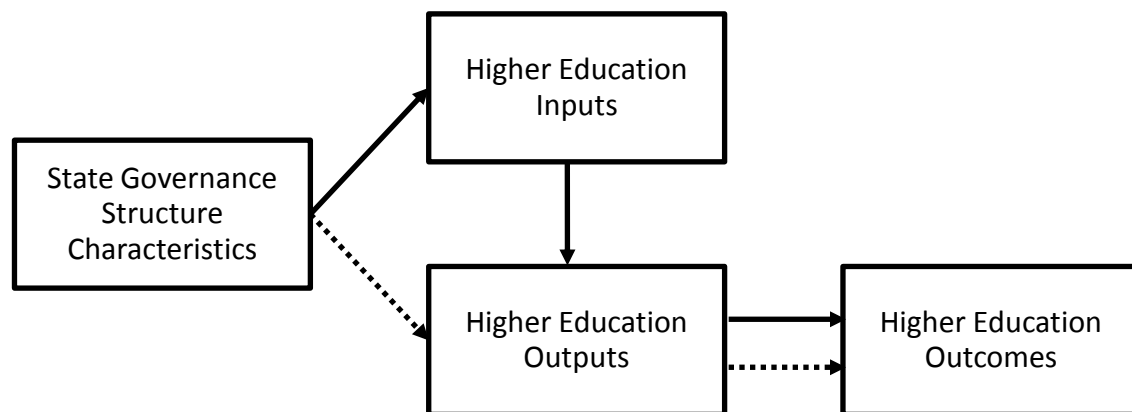
Scholars generally agree that some degree of bureaucratic autonomy and discretion is vital for effective provision of services (Nicholson-Crotty & Meier, 2003). However, from the perspective of governments, granting increased autonomy is certainly not without cost: Holding all else constant, the greater the degree of autonomy granted to a bureaucratic organization, the greater the costs associated with monitoring agency behavior become (Waterman & Meier, 1998). Additionally, governments also bear costs in applying rewards or sanctions to steer agencies, actions that potentially could have been avoided by initial curtailment of bureaucratic autonomy. A critical dimension of this issue revolves around the organizational structure of bureaucratic agencies (Nicholson-Crotty & Meier, 2003). As this discussion shows, numerous considerations come into play when states face decisions about management of public higher education.

The Impact of Governance on State Systems for Higher Education

Although a rich descriptive literature exists which chronicles the evolution of state higher education governance both over time and across states, comparatively little empirical work has explored the impact of state higher education governance on institutions. This is largely reflective of the complexity and indirect nature of the interrelationship between states, governance structures, and institutions. As Hearn and Holdsworth (2002) argue, “[s]tate influences tend to be channeled through a variety of intermediating agencies including . . . various on-campus authorities, including presidents, provosts, deans, admissions officers, academic councils, and faculty” (p. 8).

Figure 3-3 below, taken from Heller's (2004) review of the literature, shows the two dominant analytical pathways taken by the literature as indicated by the solid and dashed arrows. To date, the majority of research has focused exclusively on the link between governance characteristics and higher education inputs. While several authors have attempted to link governance arrangements to outputs, efforts in this regard are very limited.

Figure 3-3: Models of Research on Higher Education Governance



First, numerous studies have examined the influence of higher education governance structures on state higher education policy adoption, with mixed findings. Hearn and Griswold (1994) conclude that higher education governance structure is largely unrelated to higher education policy innovation, broadly defined. McLendon, Heller, and Young (2005), building on Hearn and Griswold's analytical framework, distinguish between two types of policy innovations: innovations that influence public higher education accountability and innovations that impact postsecondary education finance. The authors find weak empirical support for the influence of governance on propensity to adopt financial innovations (states with strong and centralized control of higher education were slightly more likely to adopt innovative postsecondary finance policies than those with weaker control); however, they find no connection between governance and propensity to adopt new accountability policies. McLendon, Hearn and Deaton (2006) reach a differing conclusion, finding that governance structure did have a

statistically significant influence on state adoption of one particular accountability policy: performance funding (although it was unrelated to adoption of performance budgeting, which the authors argue constitutes a weaker form of accountability). They find that states with highly centralized governance structures are less likely to adopt performance funding. Finally, Hearn, McLendon and Mokher (2008) find no connection between governance and state adoption of unit-record data systems.

A second vein of literature attempts to connect governance structure to various inputs or characteristics of the public higher education system. Many of these articles focus specifically on institutional financial characteristics such as tuition price. Lowry (2001a, 2001b) finds that institutions with greater autonomy have higher net tuition and fee revenues, all else equal, than those located in states with more powerful and centralized governance arrangements. Hearn, Griswold and Marine (1996) identify little consistency in the relationship between governance arrangements and tuition prices while Nicholson-Crotty and Meier (2003) conclude that states with coordinating boards have lower tuition prices than states with governing boards.

Regarding other institutional characteristics, Toma (1990) finds that institutions in states with more centralized higher education governance structures tend to have less reliance on tuition funding, greater student-teacher ratios, and higher percentages of tenured faculty than those in more decentralized states. Zumeta (1996) finds that states with consolidated governing boards have lower per capita expenditures on higher education than states with less centralized structures. Moody (2007) finds that public universities in states with highly centralized governance arrangements have less debt outstanding than those in decentralized states. Finally, the most comprehensive effort to link higher education governance to system characteristics has been undertaken by Volkwein (Volkwein, 1986, 1989; Volkwein & Malik, 1997) who, in a series of articles, consistently finds no relationship between campus autonomy and two critical inputs to the higher education production function: quality of faculty and institutional selectivity.

To date, very little empirical work speaks to the relationship between higher education governance structures and institutional outputs. Knott and Payne (Knott & Payne, 2004), looking at faculty research productivity, conclude that faculty at institutions in states with more centralized governance structures have lower levels of research productivity than their unfettered peers. However, Payne and Roberts (2009), in an unpublished working paper, find that this effect differs for faculty at flagship and non-flagship public institutions.

What can be distilled from an analysis of this literature? First, researchers are limited in drawing broad conclusions regarding the impact of governance on systems of public higher education by the paucity of the extant literature. Beyond Volkwein's series of analyses (Volkwein, 1986, 1989; Volkwein & Malik, 1997), the literature offers little in the way of replication. Of particular importance in this regard are the differences across studies in how researchers measure centralization. Toma (1990) and Lowry (2001a, 2001b) generate a measure of centralization by creating a ratio of institutions to governing boards. Volkwein (Volkwein, 1986, 1989; Volkwein & Malik, 1997) creates his own measures of institutional autonomy utilizing surveys of institutional administrators. Others rely on the broad categorizations of state higher education governance structures created by Paltridge (1965) and updated by Berdahl (1971), McGuinness (McGuinness, 1988; McGuinness, et al., 1994) and the staff of the ECS (1997, 2000, 2007). Researchers have long recognized that capturing the relevant characteristics of a state's higher education governance system is a difficult task due to both the diversity observed across states and the complex nature of higher education governance. Clearly, much work remains to be done in this regard.

Second, it is apparent that researchers make broadly differing assumptions about the relationship between governance centralization and bureaucratic preferences. On one hand, some researchers argue that highly centralized governance structures should be more reflective of statewide priorities for higher education, including "low tuition, broad access, and undergraduate education" (Knott & Payne, 2004, p. 17) while

decentralized governance structures should be associated with closer alignment with the preferences of institutional administrators and faculty for policies that enhance institutional prestige. Lowry (2001b), for instance, argues that a highly centralized board structure reduces board loyalty to any particular institution; further, the fact that centralized boards are typically accompanied by a sizable professional research staff further insulates them from the influence of institutional interests as they are less dependent on institutions for information (Lowry, 2001b, p. 848).

However, other scholars have taken a different view, arguing that centralized board structures should be inherently more reflective of institutional interests. Toma (1990) argues that the homogenization of policies associated with centralized boards constrains the public's ability to express preferences through institutional choice, thereby empowering institutional actors in influencing board policies. Similarly, Nicholson-Crotty and Meier (2003), taking a transactions costs approach, argue that centralized boards should be more susceptible to influence by political actors—including institutional stakeholders—due to the lower costs that these groups face in attempting to influence these boards as compared to their decentralized peers. McLendon, Hearn and Deaton (2006) simply argue that highly centralized boards are “dominated by academic stakeholders” and, therefore, are more closely aligned with institutional interests (p. 19).

How are these seemingly opposing viewpoints to be reconciled? An answer is provided by Nicholson-Crotty and Meier (2003) who argue that:

Centralized structures both create autonomy and facilitate access. . . To the extent that variation in governance structures is correlated with bureaucratic autonomy, it should limit the ability of elected officials to influence education policies. The transactions costs of individuals seeking to influence overall agency policy are lowered, however, in more centralized organizations. (p. 80)

The authors' analysis confirms the complex and intricate role of structure. They conclude that higher education governance mediates the effect of political actors on higher education but in seemingly idiosyncratic ways. Seen from this perspective, a more holistic and nuanced approach to research, which more completely captures the

political and bureaucratic environments of states, is needed to detect systematic patterns regarding the impact of governance structures on state systems for public higher education. As Nicholson-Crotty and Meier (2003) conclude, research needs to explore “what kinds of political forces are mediated [or enabled] by the various structures and how in combination these affect higher education policy” (p. 95). For example, to date, only a single paper (Lowry, 2001b) explicitly considers the stakeholders represented in the membership of state boards of higher education in linking governance to system characteristics. Similarly, the literature largely fails to consider the relative influence of interest groups in higher education decision making (Gray & Lowery, 2001; Tandberg, 2008). Rich literatures in economics, public administration, and political science exist which can inform such endeavors.

Conclusion

As Heller (2004) emphasizes, to date, very little research has explored the impact of governance structure on higher education outputs, and no research has looked at the outcomes of state systems of higher education as articulated by the Institute for Higher Education Policy (1998). While many researchers seem comfortable inferring the relationship between outputs and outcomes, others have explicitly expressed unease at the lack of empirical evidence to support this connection (Heller, 2004). A robust literature in economics has looked at the returns to education from a human capital perspective, which builds on the pioneering work on the subject by Mincer (1958), Weisbrod (1962), and others. This literature can provide a theoretical and empirical foundation for efforts to capture relevant outcome measures that can serve as dependent variables in this regard. Certainly the task becomes more difficult as one moves away from estimating the private, economic benefits of education to estimating benefits which are social in nature or accrue to the public. However, state efforts in developing unit-record data systems are moving these endeavors out of the realm of impossibility.

CHAPTER 4

STATE DECENTRALIZATION OF HIGHER EDUCATION GOVERNANCE: A HAZARD MODEL APPROACH

Introduction

The relationship between states and public higher education is one characterized by tension. Policymakers have long struggled with defining the appropriate balance between institutional autonomy and public accountability. State legislative histories provide convincing evidence of the inherent difficulty in achieving this balance: McLendon and Ness (2003), for example, identified over 100 initiatives to reform state higher education governance arrangements during the 1990s alone. An emergent vein of the literature that relies on a case study or comparative case study design describes the process of higher education governance change in a handful of states. However, as McLendon (2003b) notes, “Virtually nothing is known about how or why state governments undertake reforms of their higher education systems” (p. 58).

Building on Kingdon’s (2003) multiple streams framework, the current research is an attempt to fill this gap. Kingdon’s popular framework posits that policy change is driven by three independent streams: politics, policies, and problems. These independent streams couple to create “policy windows,” or the opportunity for policy change. The extant literature regarding higher education governance change focuses almost exclusively on the politics stream, finding that, consistent with Kingdon’s prediction, political conflict and turnover are associated with higher education governance reform. Critically, the multiple streams framework emphasizes that no single stream can create governance change unilaterally, meaning that, although the existing literature may correctly identify the aspects of the politics stream that are associated with policy change, only part of the story is being told.

Ultimately, much less is known about the role of the policies and problems stream in prompting higher education governance change. This research focuses on the most

prevalent form of governance change—decentralization—and attempts to identify characteristics of the policies and problems streams that are associated with the enactment of governance reform. Utilizing a unique dataset covering 49 states from 2000 to 2006, I employ hazard modeling to estimate the factors that are associated with increased probability of enactment of policies that decentralize state higher education governance, modeling enactment of policies decreasing institutional autonomy as a competing risk.

I find that state fiscal characteristics emerge as strong predictors of state adoption of higher education decentralization. Specifically, I find that, holding all else constant, states with greater tax efforts are statistically significantly less likely to decentralize higher education governance while states experiencing declines in tax revenues are much more likely to decentralize. This finding confirms that, similar to historical trend, the most recent wave of decentralization of higher education is strongly predicted by economic factors, a finding that is consistent with the qualitative literature looking at higher education governance change. Regarding the policies stream, I find no evidence of regional policy diffusion, a finding consistent with the extant literature (McLendon, Deaton, and Hearn, 2007). Further, I find very limited support for the influence of the internal determinants model. State socioeconomic and demographic characteristics, tested both individually and jointly, are unrelated to propensity to decentralize. Tested jointly, the characteristics of the overall state system for higher education are statistically unrelated to adoption of decentralization, although several of the included measures do reach statistical significance tested individually. Ultimately, Kingdon's characterization of the policies stream as "a primeval soup" in which multiple ideas are just "floating around" (2003, p. 165) may indeed be the best explanation for how policy solutions and policy problems come together.

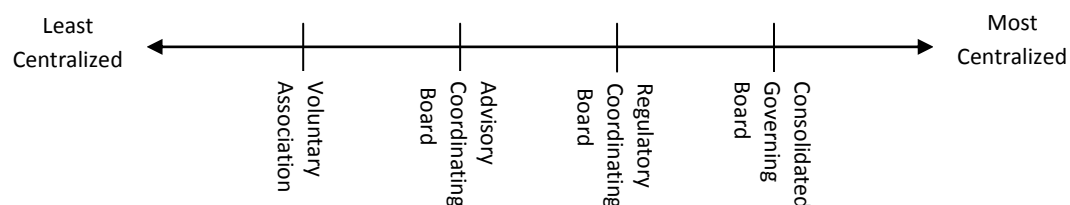
An Overview of Higher Education Governance

Since the founding of the first universities in the United States, the relationship between universities and the states in which they reside has been intricate, dynamic, and

frequently contentious (Thelin, 2004, pp. 82-83). Inherent to this relationship is the conflicting desires of the two parties: Universities argue for greater individual autonomy while states increasingly call for higher accountability in exchange for public dollars (Lane, 2007; Mingle, 1983). The higher education governance literature is riddled with metaphors employed by authors to try to facilitate understanding of this precarious relationship. For example, Lane (2007) compares the relationship between the state and public institutions to an “intricate and clumsy dance with both partners often trying to play the role of the lead dancer” (p. 615). Likewise, Martinez (2002) attempts to convey the complexity and intricacy of this relationship by likening researchers studying higher education governance to blind men describing different parts of an elephant without any conception of the characteristics of the complete animal (p. 349).

As such, much of the early literature is descriptive in nature and recognized not because of nuance, but breadth. Berdahl’s (1971) seminal work broke new ground in its comprehensiveness by developing the most complete categorization of the formal structures of state higher education governance systems to date. His analysis recognizes broad four agency types: voluntary associations, advisory coordinating boards (also known as planning agencies), regulatory coordinating boards, and consolidated governing boards. This categorization still dominates the higher education governance literature today (although states have largely abandoned the voluntary association form of governance). Essentially, his categorization represents a continuum, classifying states according to their formal authority. This continuum is represented by Figure 4-1 below.

Figure 4-1: State Higher Education Governance Systems



Clearly, voluntary associations and consolidated governing boards represent the extreme ends of the spectrum: Under these governance arrangements, institutions enjoy a high degree of autonomy and very little autonomy, respectively. However, the classifications become much less distinct as the middle of the spectrum is approached. Typically, advisory coordinating boards are empowered solely to deal with issues of system coordination and efficiency and have little direct power over institutions beyond this relatively narrow scope. However, similar to Congress' expansive interpretation of the Commerce Clause, some state legislatures have settled upon an expansive definition of "coordination" as justification for granting their advisory coordinating boards specific powers typically reserved for more powerful board structures: For instance, Kentucky's advisory coordinating board enjoys statutory control over tuition-setting, a power that is in almost all other cases reserved for consolidated governing boards. Examples such as this abound and represent real limits to the utility of Berdahl's classification scheme, although this has not impinged upon its popularity in the empirical literature (McGuinness, et al., 1994).

As this discussion has made clear, classifying a state higher education governance system as centralized or decentralized—and thereby gauging the relative autonomy of that system's component institutions—is no simple task, primarily because of the inherent difficulty in operationalizing autonomy. Berdahl (1971, 1990) and Leslie and Berdahl (2008) argue that institutional autonomy can be defined in two conceptually distinct ways: procedural autonomy and substantive autonomy. To quote Berdahl (1990):

Substantive autonomy is the power of the university or college in its corporate form to determine its own goals and programmes--if you will, the *what* of academe.

Procedural autonomy is the power of the university or college in its corporate form to determine the means by which its goals and programmes will be pursued--the *how* of academe [emphasis original]. (p. 172)

Interestingly, Berdahl (1971) intentionally chooses to ignore changes in state procedural control over institutions of public higher education, arguing that procedural controls do

not “threaten the essential ingredients of autonomy” and that they are of “only marginal importance” (p. 10).

As one might imagine, many disagree with Berdahl’s assertion. Writing only six years after the publication of Berdahl’s book, Glenny and Bowen (1977) argue that substantive and procedural autonomy are intrinsically related by proposing a thought experiment in which a state imposes severe and comprehensive procedural controls on institutions. Would the aggregate effect of these controls, ask the authors, not be tantamount to explicit limitation on substantive autonomy? Further, while Berdahl discounts procedural autonomy as useful only for such mundane tasks as establishing common indicators and definitions of said indicators in order to facilitate data collection, Glenny and Bowen argue that this very act impinges upon substantive autonomy through implicit agenda-setting. They argue that, by revealing to institutions the relative importance of performance indicators (and the preferred method of measuring these indicators), states are revealing their own preferences to the institutions they financially support (79). Contrary to Berdahl’s (1971) assertions, most researchers recognize the implications of both substantive and procedural autonomy for institutional independence.

This shortcoming notwithstanding, Berdahl’s distinction between substantive and procedural autonomy is one that has proven itself to be a useful analytical tool in analyzing higher education governance change and assessing the overall impact of these changes on system outcomes. McLendon (2003b) and McLendon and Hearn (2009), among others, adopt this framework in categorizing state governance reforms but, following the example of Glenny and Bowen (1977), recognize that institutional autonomy is determined not solely based on substantive autonomy, but by both substantive and procedural autonomy. Similarly, Volkwein and Malik (1997) argue that institutional autonomy is best measured along two dimensions: financial/personnel flexibility and academic flexibility. Financial/personnel flexibility captures the extent to which institutions have freedom over “managing budgets and revenues, expending

funds, setting tuition, and appointing personnel” while academic flexibility measures institutional control over “academic programs, degree requirements, standards, and departments” as well as “freedom from state-imposed accountability requirements” (Volkwein & Malik, 1997, p. 22). While the authors assert that their scheme is largely congruent with Berdanl’s, it is not strictly identical: Financial/personnel flexibility incorporates some aspects of substantive autonomy such as budgeting, while academic flexibility includes some aspects of procedural autonomy, such as management of academic departments.

Going further, Berdahl also compared state governance systems along numerous dimensions, including staffing, planning, research capacity, budget review authority and program review authority. These comparisons provide researchers with concrete examples of the differences that exist both across and within agency types as implemented by the various states. In more recent years, Berdahl’s work has been continued and updated by the ECS’ State Postsecondary Structures Handbook (Education Commission of the States, 1997, 2000, 2007; McGuinness, 1988; McGuinness, et al., 1994).

Moving beyond these macro-level, predominantly descriptive works, much research has attempted to provide insight as to the “development and functioning of different governance arrangements for higher education;” additionally, a growing literature exists which explores the issues of state higher education governance reform and change (Bastedo, 2009; Leslie & Berdahl, 2008; Leslie & Novak, 2003; Martinez, 1999; Mills, 2007; RC Richardson, Finney, Bracco, & Callan, 1999) . However, the bulk of this work has been qualitative (and frequently normative) in nature, providing little in the way of generalizability toward the development of a comprehensive, positive theory or framework explaining state higher education governance reform. In fact, some of these authors explicitly argue that the development of such a theory would be “hard” (Mills, 2007, p. 185) if not outright “impossible” (Leslie & Novak, 2003, p. 99), owing to the fact

that the political behavior associated with higher education governance change is thought to be sufficiently unsystematic as to defy prediction.

Lending some credence to this assertion is the volatility observed in state higher education governance structures over time. Marcus' (1997) survey of 49 state higher education executive officers (SHEEOs) identified 25 legislative proposals designed to restructure state higher education governance systems between 1989 and 1994 and another 24 proposals initiated by other state officials. A similar study by McLendon and Ness (2003), drawing on numerous primary and secondary sources, identified more than 100 such proposals in the 1990s. While some were enacted, the vast majority of the proposals identified by both Marcus and McLendon et al. stalled somewhere in the legislative process, failing to be signed into state law. These restructuring initiatives varied widely in their scope. While the majority propose change to state higher education governance systems on the margin, a few (e.g. legislation enacted in New Jersey in 1994 or a series of legislative actions in Florida in the early 2000s) went much further, functionally discarding the entire existing state higher education governance system and constructing a new one from the ground up.

Further complicating the search for an underlying theoretical explanation of governance change is the fact that, while earlier periods were demarcated by a general trend toward either centralization or decentralization, the most recent wave of reforms is more difficult to categorize. Researchers generally agree that the period from the mid-1950s to the late 1970s can be categorized as a general trend towards centralization. Birdahl (1971) reports that, while 28 states had no state agency responsible for public higher education in 1949, this number fell to two only 20 years later with the majority of adopters choosing to create regulatory coordinating boards or consolidated governing boards. The immediately succeeding decade saw a movement toward deregulation and decentralization that corresponded both with the recession of the early 1980s and the growth in popularity of the devolution and the "new federalism" movements in American government, which emphasized decentralized management and reliance on

markets to enhance efficiency (Donahue, 1997; McLendon, 2003b). The most recent reforms (mid-1990s to present) reveal much more diversity in state approaches to higher education governance. Some states have adopted new forms of centralization, such as performance funding, which allows states to provide direction to higher education while still permitting some degree of institutional choice (McLendon, et al., 2006; Zumeta, 2000). These new approaches toward governance seem to reflect the experimental attitude of states in post-devolution government service provision, which has been observed in other policy areas such as public assistance (Fording, Soss, & Schram, 2007; Soss, Schram, Vartanian, & O'Brien, 2001) and public healthcare provision (Bailey & Rom, 2008; Volden, 2006), coupled with an emergent focus on public accountability and efficiency. As such, much of the focus of state higher education governance reform has centered on increasing overall system performance and preserving and expanding consumer choice while controlling or at least constraining expenditures. Much variation exists across states with regard to the mechanisms employed to accomplish these goals.

This discussion notwithstanding, however, the overall trend in higher education governance reform in recent years still seems largely focused on decentralization, as evidenced by Marcus' (1997) survey of states that found that twice as many states proposed decentralizing higher education governance in the 1990s as in the 1980s (402). McLendon's (2003b) survey of the literature synthesizes four common approaches taken by legislatures in increasing institutional autonomy. First, states have enacted legislation enhancing institutional management flexibility, a phenomenon referred to as deregulation elsewhere in the literature (McLendon & Hearn, 2009). For example, under this approach, a state might exempt institutions from following state procurement laws or exempt institutions from state personnel hiring procedures. Returning to Berdahl's categorization, this approach focuses more on procedural autonomy, allowing institutions greater control over process. A second approach common to many state efforts to decentralize higher education governance has been the disaggregation of university governance systems. Under this approach, legislatures

confer control, both substantive and procedural, of institutions from system- or state-level boards to existing or newly-created institutional boards. A third common approach has been to increase institutional autonomy by legislatively changing the status of institutions from purely public to a public/private hybrid. This approach introduces fundamental change into the relationship between institutions and states in that institutions are no longer purely public entities; Instead, they enjoy much of the same autonomy and discretion as private institutions. Typically, however, this autonomy is not without cost: It is often accompanied by a greatly reduced public financial support. The final common approach that states have taken to decentralizing higher education is modification of existing state governance systems to transfer authority from state boards to institutions. Under this approach, a state might move from a regulatory coordinating board to an advisory coordinating board, retaining the state board's ability to facilitate cooperation between institutions but transferring much of the ability to regulate the internal workings of boards to the institutions themselves. A weaker form of this approach might be for a state to change the balance of power on its board to include greater institutional representation.

Understanding Higher Education Governance Change

Why do states choose to adopt a particular governance arrangement? What drives states to change these arrangements? As McLendon, Deaton and Hearn (2007) note, "little is known empirically about the origins of governance change in public higher education" (p. 646). A review of the relevant literature confirms this assertion. The bulk of the research that addresses this topic adopts a case study or comparative case study approach, making generalization difficult. However, a careful synthesis of these studies reveals a nearly universal conclusion: State politics matters. Bastedo (2009), for example, found that governance reform in Massachusetts relied upon the political capital that the state's coordinating board chair had accrued during his work in state government and his efforts during the governor's reelection campaign. Similarly, Mills' (2007) account of governance change in Florida shows that the change adopted in that state relied upon the support of key political actors as well as recent Republican

assumption of legislative control. Comparative case studies of Kentucky and Minnesota by Leslie and Novak (2003) reach similar conclusions, finding that the governance change in these states also hinged on political capital investments by key government officials, leading the authors to conclude that political factors were “usually central to the story of reform” (p. 117). The emphasis on the importance of politics is also reinforced by the findings of McLendon, Deaton and Hearn (2007) who look at state legislative enactment of higher education governance change in 49 states from 1985 to 2000. They find that political instability, defined as transition from divided to single party legislative control, is associated with increased probability of adoption of governance change.

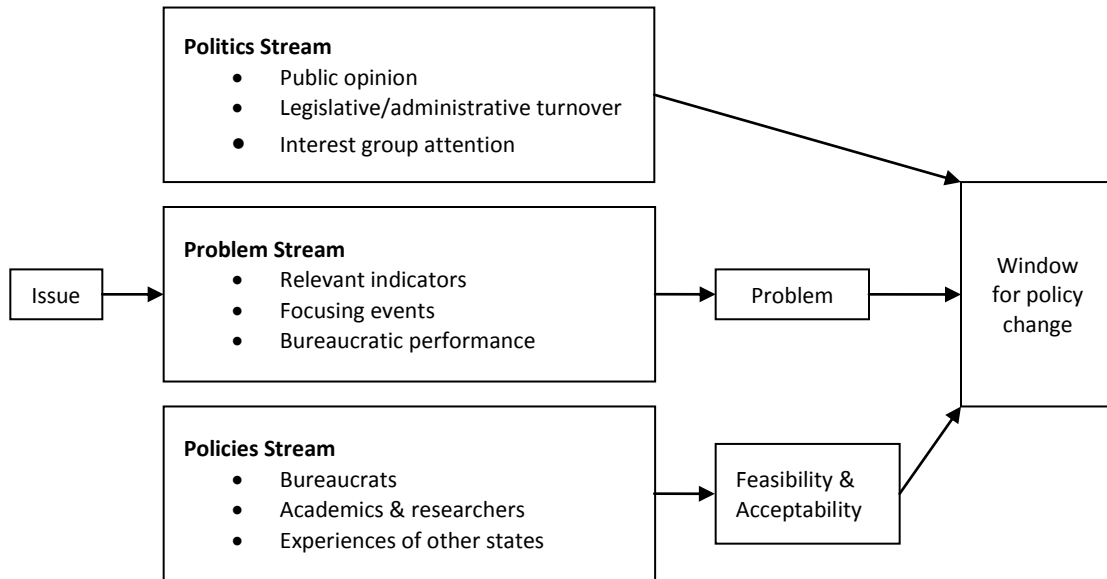
Can politics be the sole explanation? Many theoretical perspectives exist that seek to provide insight into the seemingly random process of policy change (Sabatier, 1999). Among these competing theories, Kingdon’s multiple streams framework has been quite influential (at least as measured by number of citations) in how researchers in the social sciences have approached understanding policy change. However, despite the fact that McLendon (2003a) found that adoption of higher education governance reform in three states “strongly resembled” the multiple streams framework, with few exceptions, it has been largely ignored by the higher education literature (Mills, 2007; Ness & Mistretta, 2009).

Kingdon’s framework posits the existence of three largely independent streams—problems, policies, and politics—which “flow through the governmental system . . . each according to its own unique set of internal dynamics and rules” (McLendon, 2003b, p. 102). The problem stream comprises issues that policymakers perceive as problems. Zahariadis (1999, p. 76) identifies three mechanisms through which issues or conditions can be elevated to the status of problem by policymakers, although he emphasizes the critical nature of randomness in the process. First, indicators can convince policymakers of the magnitude of an issue. Second, a focal event or crisis can call attention to a problem. Third, feedback from existing programs can elevate conditions to problems.

The second stream discussed by Kingdon is the policies stream. Essentially, the policies stream contains all potential policy actions that can be taken in response to the issue made salient by the problem stream. While technically all relevant ideas are part of the policies stream, Zahariadis (1999) emphasizes that most do not ever receive serious consideration by policymakers for various reasons, including technical feasibility and value acceptability. McLendon (2003a, pp. 507-508) identifies three mechanisms through which policy solutions can be identified. First, they can be borrowed from the policy solutions enacted or considered by other states. Second, they can be adopted from other policy areas. Finally, they can be developed by researchers or specialists who have special knowledge of the particular policy area of interest.

The third stream identified by Kingdon is the politics stream. It consists of three broadly defined elements: public mood, interest group pressure, and governmental turnover. According to Zahariadis (1999), the public mood and governmental turnover elements of the politics stream are particularly important in defining the politics stream. Kingdon (2003) emphasizes that no single stream is powerful enough to unilaterally bring about policy change. Instead, at least two of the three streams must “couple,” creating “policy windows” or opportunities for policy change to occur. Figure 4-2 provides a graphical representation of Kingdon’s framework.

Figure 4-2: Kingdon's Multiple Streams Framework



Viewed through this framework, the extant literature dealing with higher education governance change has focused almost exclusively on the politics stream, and has, consistent with the predictions made by Kingdon (2003), generally agreed that political conflict and administrative and legislative turnover seem to be associated with higher education governance reform. However, this focus on the politics stream has largely come at the expense of the problem and policies streams, which have received much less attention in the literature. Kingdon's framework explicitly asserts that policy change is not possible without the coupling of multiple streams, implying that, while the politics stream can contribute to policy change, it cannot unilaterally bring change about. What factors, then, prepare the problem and policies stream for coupling?

Regarding the problem stream, a perusal of the historical trends associated with higher education governance change provides some insight into this question. McLendon and Hearn (2009) argue that the economic recessions of the 1970s and 1980s yielded a wave of governance decentralization as policymakers granted institutions greater autonomy in exchange for decreased public financial support. However, similar economic underpinnings do not seem to be associated with legislative initiatives to decrease institutional autonomy, such as the implementation of performance funding for higher

education. Instead, these movements seem more driven by concerns regarding institutional accountability and responsiveness to legislative priorities (Zumeta, 2000). Do economic conditions play a role in preparing the problems stream for coupling and thereby creating a window for policy change?

To date, this question remains largely unanswered in the literature. McLendon's (2003a) comparative case study of higher education decentralization in Arkansas, Hawaii, and Illinois finds that the problem stream in these states is comprised of legislative concern over "state economic stagnation or decline [and] budget crisis" (p. 507). Do these findings generalize beyond these states? McLendon, Deaton and Hearn (2007), in the only research to date which quantitatively studies the antecedents of higher education governance change, fail to find empirical support for the influence of state economic conditions on the adoption of governance reform. However, the dependent variable used in this analysis is governance change, which captures enactment of both centralization and decentralization, implying that their results apply to governance change generally rather than to centralization or decentralization specifically. As such, their results suggest that political turmoil seems associated with both adoption of decentralization and centralization, a conclusion which is largely consistent with Kingdon's model. However, regarding the problem stream, they find no evidence of common antecedents to policy change, a finding which is perhaps explained by the authors' overly broad definition of policy change which includes both centralization and decentralization. By looking at only a single type of change—decentralization—the current research represents the first empirical test of McLendon's (2003a) hypothesis that higher education governance decentralization is prompted by economic conditions.

Similarly, a review of the literature provides some insight as to the development of the policies stream. Adoption and diffusion of innovation in state governments is a subject that has long held the attention of social scientists from a number of disciplines, including sociology, economics, public administration, political science, and education.

Early work on the subject focused almost exclusively on intrastate factors affecting policy adoption (Dawson & Robinson, 1963). Walker's work (1969) is widely recognized as the first theoretical and empirical attempt to "develop propositions which might be used as guides to the study of the diffusion of innovations" systematically across the U.S. states (p. 881). It synthesizes the disparate factors discussed in the previous literature that influence state policy adoption, building an integrated model that includes state demographic, economic, and political characteristics, as well as measures of policy diffusion which can occur nationally, regionally, or through state participation in professional membership organizations such as the Council of State Governments (CSG) or the National Association of State Budget Officers (NASBO) (Walker, 1969, p. 894).

Building on Walker's work, Gray (1973) developed regression models that include a parameter which captures policy diffusion as a function of both previous state adoption and the interaction between adopters and potential adopters (p. 1176). Gray's theoretical framework and modeling approach introduced a new level of methodological sophistication into the study of policy innovation. However, her work shares a common deficiency with the policy diffusion literature of the time: lack of a comprehensive theoretical model which unites elements of both the internal determinants and diffusion models. Although both Walker (1969) and Gray (1973) provide substantive empirical tests of the validity of the internal determinants and diffusion models independently, neither fully integrates both models into a single framework.

This integration was accomplished by Berry and Berry (1990) who recognized that "neither a pure regional diffusion model nor a pure internal determinants model [provides] a pure plausible explanation of state innovation in isolation" (p. 396). Berry and Berry, in a study of the determinants of the adoption of state lotteries, introduce a theoretical model that unites both the internal determinants and policy diffusion models. Relying on an analytical approach borrowed from the medical literature known

as event history analysis, they find support for both the internal determinants and the regional diffusion models as well as an interactive effect between the two. In their concluding remarks, they argue persuasively that researchers should move away from both cross-sectional analyses of policy adoption and empirical approaches that do not integrate the diffusion and internal determinants models in favor of more dynamic empirical approaches (441).

Since Berry and Berry's innovative approach to the study of policy adoption, researchers seem to have been highly persuaded by both the authors' plea for dynamic modeling approaches and their innovative analytical approach, although empirical support for regional policy diffusion has been decidedly mixed. Mooney's (2001) review of the policy diffusion literature shows that only 12 of the 24 policy diffusion studies published in top political science journals estimate "positive and statistically significant coefficients for the regional effect [at conventional α -levels]" (p. 107). This finding has led some researchers to theorize that the policy diffusion literature largely oversimplified the operationalization of the learning process in which states engage when making decisions regarding policy adoption. For instance, Grossback, Nicholson-Crotty & Peterson (2004) find evidence that states rely on ideological cues from other states to learn about innovative policies, while Mooney (2001) argues that current measures of policy adoption and diffusion fail to recognize the fact that states can learn from the negative experiences of other states' policy innovations and choose not to adopt a policy on this basis, rather than strictly through emulation. Ultimately, while the introduction of event history analysis into the policy adoption literature has allowed for much more nuanced analysis of the factors associated with state policy adoption and innovation, the differing policy areas and analytical models present little in the way of consistency of findings: While some studies find strong support for policy diffusion, others find little to support the idea that states emulate, learn, and compete with each other along policy dimensions.

Applying the policy adoption literature to higher education governance change yields several plausible mechanisms through which the policies stream is developed. Marcus' (1997) survey of SHEEOs identifies regional patterns in the initiation of governance reform, finding that West Virginia's reform mirrored that of neighboring Virginia, while reforms in New Jersey and Massachusetts were also similar in design. However, his univariate analytical technique fails to control for other potentially relevant variables that could explain these similarities. McLendon, Deaton and Hearn (2007), utilizing event history analysis, find no evidence of policy diffusion in their study of higher education governance change after controlling for other state characteristics. However, to date, these are the only two studies which specifically address this question. Is governance decentralization in higher education driven by interstate diffusion of policy, the internal determinants model, or some combination thereof?

Predicting Governance Decentralization

For the purposes of conducting the analysis, a dataset was compiled for 49 states spanning the years 2000 to 2006.³ The observed dependent variable in this analysis is the adoption of legislation which decentralizes higher education governance. To be coded as decentralizing legislation, enacted legislation had to meet one or more of the following criteria, as described by McLendon (2003a):

1. Transfer decision-making authority of institutional management from the state level to the system or campus level;
2. Disaggregate institutional governance systems;
3. Reconstitute institutions as public corporations; or
4. Introduce substantial modification to state governance systems which empowers institutions.

These four categories represent the most common approaches that states have taken in decentralizing higher education governance and are purposefully utilized in order to capture changes in both substantive and procedural autonomy. Enacted legislation

³ Nebraska was omitted due to its unique unicameral legislative structure.

achieving the opposite of the aforementioned criteria was recorded as centralizing legislation for the purposes of modeling the competing risk.

The data regarding higher education governance changes were derived from a variety of sources, including the legislation databases of the Education Commission of the States, the Association of Governing Boards of Universities and Colleges, as well as the data collected by McLendon and Ness (2003). These sources were augmented by keyword searches of Westlaw's state legislative database, Google News archives, and the online archives of the *Chronicle for Higher Education*. From these sources, six non-repeated centralization and 12 non-repeated decentralization events were identified. These events are described in greater detail in the table below ("D" indicates decentralization, while "C" indicates centralization).

Table 4-1: Enacted Legislation Changing Higher Education Governance, 2000-2006

State	Year	Type	Description
FL	2000	D	Abolishes board of regents of state university system, establishes individual institutional governing boards
HI	2000	D	Proposes constitutional amendment eliminating Hawaii Board of Regents' requirement to get legislative approval for policy formulation
MD	2000	C	Give state board programmatic and mission oversight of regional education centers, previously controlled by institutions
TN	2000	C	Requires Tennessee Higher Education Commission approval of new branch or satellite campuses of existing state institutions
ND	2001	C	Grants state board power to fire university system personnel and set their job duties
AZ	2002	D	Transfers community college oversight authority from State Board of Directors to individual community college district governing boards
SC	2002	D	Increases institutional representation on state board councils
CO	2003	D	Dissolves the Board of State Colleges, establishes independent governing boards for Mesa State, Adams State, and Western State
IL	2003	D	Appoints faculty representative to the state board for higher education
NV	2003	C	Proposes constitutional amendment to permit governor to appoint board of regent members

Table 4-1 (continued)

OR	2003	D	Exempts universities from having to use State Administrative Services for procurement
TX	2003	D	Shifts tuition-setting authority from legislature to institutions
KY	2004	C	Moves control of community college system from University of Kentucky to state board for community colleges
VA	2004	D	Adds faculty representative to state board of community colleges
NH	2005	D	Grants regional community college boards the power to appoint and fix compensation of institutional presidents
KS	2006	D	Grants institutions greater autonomy over purchasing and insurance
LA	2006	D	Removes authority of board of regents to confirm presidential nominees
RI	2006	C	Grants governor power to remove state board members for cause

Based on the literature and the theoretical discussion above, the model includes five categories of independent variables: state fiscal health, state political variables, characteristics of the state system for higher education, state socio-economic and demographic characteristics, and a variable capturing policy adoption patterns across states. Table 4-2 presents definitions, sources, and descriptive statistics for the variables included in the analysis.⁴

State Fiscal Characteristics

The model includes two related measures of state fiscal characteristics. Tax revenue as a percentage of gross state product is included to measure the relative tax effort of states. The model also includes an indicator variable that is set equal to one if a state experienced a real dollar decline in total tax revenue as compared to the immediately preceding year. Drawing on Kingdon's multiple streams framework and consistent with the previous literature, poorer fiscal health (tax revenue declines and lower tax revenues as a percent of gross state product) is hypothesized to prime the problems

⁴ Due to the bias that would be introduced by producing descriptive statistics covering all periods of active spells, means and standard deviations are provided for variables only for the initial period of all spells, FY2000.

stream for coupling, and is therefore expected to be associated with higher propensity to decentralize higher education. Both of these variables are lagged one year.

State System for Higher Education

The model includes six variables designed to capture the impact of the state's system for higher education. First, I include an indicator variable that is set equal to one if a state has a coordinating board for higher education governance. McLendon, Deaton, and Hearn (2007) find no relationship between existing governance structure and propensity to adopt governance change, although they hypothesize that states with coordinating boards should be more likely to enact governance reform due to the inherent political instability associated with these boards as compared to consolidated governing boards. However, looking solely at decentralization adds additional ambiguity to this discussion: While coordinating boards might be more politically unstable and, therefore, more prone to governance change, governing boards are inherently more centralized, and, therefore, perhaps offer more opportunity for decentralization. As such, I have no expectation for the effect of this variable on propensity to decentralize.

I also include a variable that measures the relative share of educational costs borne by students. Given the attention that has been recently given to increases in cost of attendance at public universities, this variable is expected to be inversely related to propensity to decentralize and, returning to Kingdon's multiple streams, provides a potential alternative mechanism through which the problems stream can be developed.

Also included are two variables that capture the overall size of a state's public system for higher education. The first variable records the total state public full-time equivalent (FTE) enrollment. The second is an indicator variable that is set equal to one if a state's total public FTE enrollment has grown since the previous year. Both variables are lagged one year. As McLendon, Deaton, and Hearn (2007) argue, historical evidence suggests that, all else equal, larger enrollments have led to greater governmental control over higher education. Additional enrollments place "added burdens on state budgets,

ratcheting up scrutiny” on public higher education (McLendon, Deaton, and Hearn, 2007, p. 655). Following this logic, I expect that, all else equal, both overall size and growth of the public system for higher education should be negatively associated with adoption of decentralization.

Additionally, two variables are included to capture the state’s higher education enrollment mix. First, a variable is included that captures the percentage of the total state FTE enrollment that is enrolled at private institutions. As McLendon (2003a) discusses, an important source of solutions for the policies stream is emulation, the source of which can be either internal or external. As such, we could anticipate that states with strong traditions of private higher education would draw from that tradition in formulating policy for public higher education. There is some limited evidence supporting this idea. For instance, the Grapevine surveys of higher education finance generally find that states with a strong private tradition of higher education tend to embrace a more market-like approach toward funding public institutions, relying on the high-tuition, high-aid model that is prevalent in private institutions. Given the highly decentralized nature of private higher education governance, I expect that states with larger private sectors for higher education are more likely to emulate this sector in determining public higher education governance and are more likely to adopt decentralization.

Second, I include a variable that captures the state enrollment mix between two- and four-year institutions. The two-year sector for higher education is, as many authors note, very different from the four-year sector in terms of both mission and clientele. While states have embraced widely differing approaches toward governance of the two-year sector, Richardson and los Santos (2000) argue that states with more centralized governance structures for the two-year sector have faced significant challenges in developing coherent and efficient policies that reflect this differing nature, especially in states where the two- and four-year sectors are managed by a single centralized board. This challenge has become particularly pronounced in states that have experienced

rapid and significant growth in demand in the two-year sector due to evolving economic and demographic factors. Therefore, I expect that, all else equal, states that have relatively large two-year sectors for higher education are more likely to decentralize in order to promote both overall fiscal efficiency as well as divergent public interests.

State Political Variables

In order to capture the effect of state politics on policy adoption, the model includes three variables: two indicator variables that reflect single party control of government (both chambers of the legislature and the governor's office), as well as a measure of voter turnout in the immediately preceding presidential election. The policy adoption literature argues that single party control of government, regardless of party, facilitates policy innovation by "removing 'roadblocks' resulting from the need to compromise between two parties" (Berry and Berry, 1990, p. 403). Therefore, I could hypothesize that unified party control of government should yield greater propensity to innovate. However, historical evidence suggests that the Republican Party is more closely associated with the overall government trend towards decentralization (McLendon, 2003a). As such, I might expect that Republican-controlled governments are more likely to enact decentralization than either divided-party or Democrat-controlled governments. Therefore, the expected impact of partisanship on propensity to adopt decentralization is ambiguous.

I also include a variable that measures voter turnout in the immediately preceding presidential election, a variable that is included as a relative measure of public participation. Scholars have recognized that voting is a primary mechanism for citizens to make their preferences known to government (Downs, 1957; Schumpeter, 1994); therefore, it is reasonable to assume that, all else equal, legislators in states with comparatively higher voter turnout would enact policies that are more closely aligned with public preferences. However, for this to matter in the current context, individuals would have to hold consistent preferences regarding state higher education governance. Studies suggest that no form of institutional governance is inherently

superior to another in terms of overall system efficiency and effectiveness; instead, governance structures should be determined largely by the characteristics of the environment in which they exist (Berdahl, 1971; Leslie & Berdahl, 2008). Following this logic, there is little reason to assume that citizens hold strong and consistent preferences for one form of governance over another. As such, I have no *a priori* expectation for the impact of this variable on propensity to decentralize.

State Socioeconomic and Demographic Variables

Drawing from the internal determinants framework, the empirical model also includes a host of common socioeconomic and demographic variables that are included in order to capture the impact of differences in state population characteristics that exist across states and over time, including the wealth, age, education, and ethnicity of the population. These variables have been largely ignored in the governance literature with one notable exception: Volkwein and Malik's (1997) analysis of the impacts of autonomy on university performance finds no statistically significant relationship between any state socioeconomic and demographic characteristics (including the variables included in the current research) and state higher education governance structure. However, due to the limited utilization of these variables in the literature and the differing analytical approach utilized in the current research, they have been included as a test of the robustness of Volkwein and Malik's (1997) conclusions.

Regional Diffusion of Policy

Finally, in order to capture the impact of regional diffusion of policy, I include a variable that captures the cumulative adoption of decentralization in neighboring states. Consistent with many of the studies of higher education policy diffusion, I define "neighboring" in this context as being a member of the same regional compact for higher education rather than strictly contiguous (Doyle, 2006b; McLendon, Deaton, & Hearn, 2007). This variable provides critical insight as to the composition of the policies stream: A positive and statistically significant coefficient on this variable provides evidence that states are borrowing policy solutions from their neighbors. Given the

mixed support for regional diffusion of higher education governance policy, I have no *a priori* expectation for this variable.

Table 4-2: Variable Descriptions, Sources, and Descriptive Statistics¹

	Variable	Definition	Source	Mean	Standard Deviation
<u>State Fiscal Conditions</u>					
	Tax revenue as a percent of GSP	Total state tax revenue as a percentage of Gross State Product, lagged one year	GSP: Bureau of Economic Analysis (BEA); Tax revenue: The Statistical Abstract of the United States	5.77	1.20
	Tax revenue drop	Dummy variable, =1 if state experienced a decline in total tax revenues from previous year, lagged one year	The Statistical Abstract of the United States	.24	.43
<u>State Socio-economic and Demographic Characteristics</u>					
65	Household income	Median household income, in 2000 dollars	The Integrated Public Use Microdata Series: Version 4.0 (IPUMS)	49099.11	7423.66
	Elderly	Percent of state population age 65 or higher	IPUMS	12.53	1.20
	College-age	Percent of state population age 18 to 24	IPUMS	9.78	.97
	Educational attainment	Percent of state population with at least 4 years of education beyond high school	IPUMS	16.00	3.05
	Minority	Percent of state population belonging to a minority ethnic group	IPUMS	20.76	13.03
<u>Characteristics of the State Higher Education System</u>					
	4-year enrollment	Percentage of total state FTE enrollment in 4-year institutions, lagged one year	The Statistical Abstract of the United States	67.72	13.38

Table 4-2 (continued)

	Private enrollment	The percentage of total state FTE enrollment in private institutions, lagged one year	The Integrated Postsecondary Education Data System (IPEDS)	24.18	13.15
	Total public enrollment	The state's total FTE enrollment in public institutions, lagged one year	State Higher Education Executive Officers <i>State Higher Education Finance</i> (SHEEO-SHEF)	173123.90	222764.10
	Enrollment increase	Dummy variable, =1 if state experience an increase in public FTE since previous year, lagged one year	SHEEO-SHEF	.84	.37
	Student share	The share of total educational revenue from student (net tuition revenue as a percentage of total educational revenue)	SHEEO-SHEF	32.58	13.42
g	Coordinating board	Dummy variable, =1 if state has a coordinating board for higher education	SHEEO	.45	.50
<u>State Government Characteristics</u>					
	Republican	Dummy variable, =1 if Republican party controls governorship and both chambers of legislature	Legislature: National Conference of State Legislatures (NCSL); Governor: National Governors Association (NGA)	.30	.46
	Democrat	Dummy variable, =1 if Democrat party controls governorship and both chambers of legislature	NCSL; NGA	.17	.38
	Vote	Percent of state's voting age population that voted in most recent Presidential election	U.S. Census Bureau's Current Population Survey	57.52	6.64

Table 4-2 (continued)

<u>Policy Adoption Patterns</u>				
Regional adoption	Percentage of states in same regional compact that have enacted decentralizing legislation, lagged one year	Author's calculation	0	0

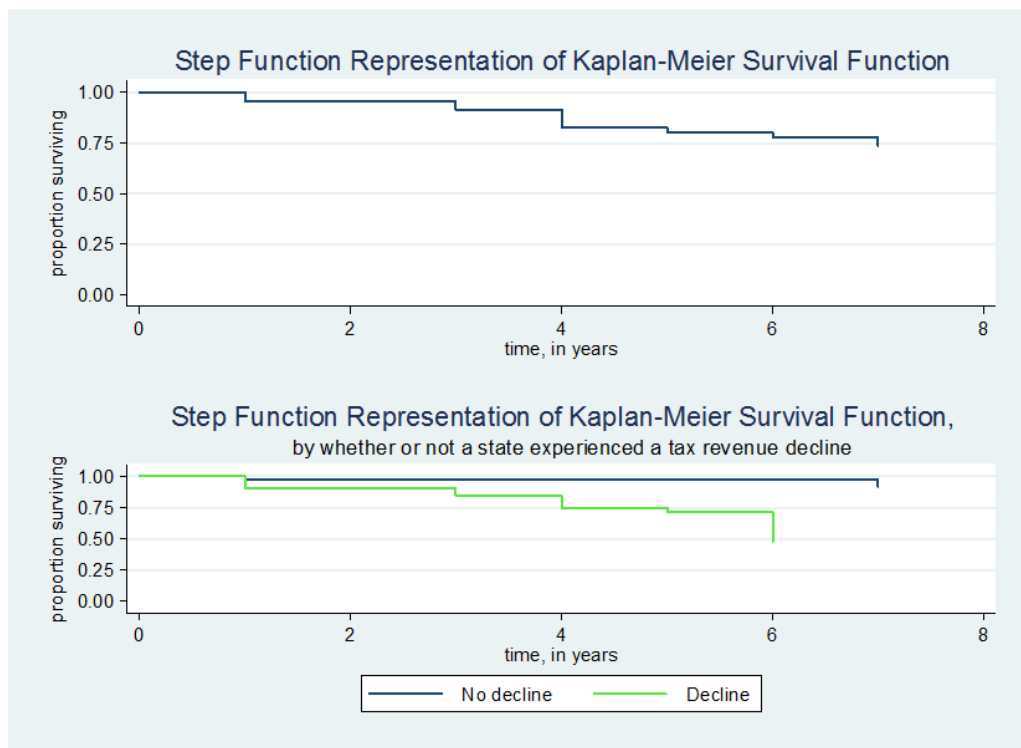
¹ Descriptive Statistics for variables of interest are presented for the year 2000—the first period of the spell of interest.

Empirical Estimation

As an initial step in analyzing the data, a Kaplan-Meier survival function was estimated and graphed. The Kaplan-Meier estimator is useful for producing basic estimates of survival functions. It is advantageous in that it takes into account censoring in the data, which may occur if an observation drops out of the dataset due to attrition, or, as is the case in the current analysis, due to the occurrence of a competing event. However, the Kaplan-Meier survival function is a univariate technique that assumes that survival is a function of time and time only, limiting its usefulness to exploratory research only.

Figure 4-3 provides a visual representation of the estimated Kaplan-Meier survival function, both overall and disaggregated by whether or not a state experienced a real dollar decline in overall tax revenue.

Figure 4-3: Step Function Representation of the Kaplan-Meier Survival Function



As this figure shows, states that experience real dollar tax revenue declines appear to have much shorter estimated durations for adoption of legislation decentralizing higher education than those that do not experience declines. While the figure above provides

support for the hypothesis that economic conditions prompt decentralization of higher education governance, more rigorous, multivariate techniques are needed to confirm the validity of this finding.

In order to provide a more rigorous test of the research hypotheses, a competing risk hazard model was specified. Hazard models (also known as event history analysis, survival time regression, duration models, or failure time models) analyze dynamic change processes and explain patterns and causes of changes (Yamaguchi, 1991). Specifically, a hazard model is a maximum likelihood estimator of the conditional probability of a change, or “event”, occurring for individual i at time t , given that the event has not previously occurred for that individual. This conditional probability distribution is known as the hazard rate and is estimated using longitudinal data collected over the relevant time period, including the independent variables of interest as well as a binary variable indicating event occurrence.

The basic unit of analysis in a hazard model is not the individual (as in cross-sectional regression) or the individual-year (as in time series regression), but the *spell*. A spell is recorded for each individual that represents the duration of time between the initial observation of the individual and either 1) event occurrence, 2) the individual’s disappearance from the dataset, or 3) the period of observation ending without an event occurring. All individuals are considered to be “at risk” for event occurrence until one of these three possibilities occurs. Spells ending with event occurrence are considered to be “complete” spells, while spells ending due to either the individual disappearing from the dataset or the period of observation ending are considered “incomplete” spells. All “at risk” observations are considered part of the risk set. As time progresses, the size of the risk set decreases as spells end (Berry & Berry, 1990; Butler, 2009).

Many hazard models are estimated as independent risk models (DesJardins, 2003). Independent risk models consider only one type of event through which a spell can end—the event of interest. For example, an independent risk model of transition from

unemployment to employment would treat a spell as complete only if an observed individual obtains employment. However, this approach ignores an alternative and potentially important alternative pathway to spell completion—in this case, dropout from the labor force. Essentially, this approach treats labor force dropout as not meaningfully different from continued unemployment, controlling for explanatory variables. Given that it is realistic to assume that these two potential outcomes—employment attainment and labor force dropout—are strongly negatively correlated, misspecification such as omission of relevant explanatory variables likely introduces bias into estimation of coefficients, the magnitude of which depends on the strength of the correlation between the event of interest and the competing event. Likelihood ratio tests for model selection can be utilized to provide straightforward guidance regarding the appropriateness of competing versus independent risk model specifications (Butler, 2009; Vuong, 1989).

Building on the empirical models utilized by Berry and Berry (1990, 1992) and McLendon, Deaton and Hearn (2007), the hazard model utilized in this analysis is specified as:

$$h(t) = \exp(\beta_0 + \beta_1(L_taxrev\%gsp) + \beta_2(L_taxrev_drop) + \beta_3(hhincome) + \beta_4(pct_65plus) + \beta_5(pct_18to24) + \beta_6(pct_HE4plus) + \beta_7(vote) + \beta_8(L_pct4yr) + \beta_9(L_pctpriv) + \beta_{10}(L_pubfte) + \beta_{11}(L_pubfte_increase) + \beta_{12}(L_stu_share) + \beta_{13}(republican) + \beta_{14}(democrat) + \beta_{15}(regional_adoption))$$

where $h(t)$ is the estimated conditional probability of enactment of legislation decentralizing a state's higher education governance system. Estimating this hazard model necessitates appropriate treatment of two complicating factors: competing and repeated events. First, although the event of interest in this case is enactment of decentralizing legislation, it is also possible that a state could enact legislation that centralizes higher education governance. Adoption of legislation of this type represents a competing event in the sense that enactment of centralizing legislation ends a spell by introducing a change in the state's configuration for higher education governance as it

existed at the beginning of the spell. For this reason, in addition to collecting data regarding enactment of decentralizing legislation, I also collect data regarding enactment of centralizing legislation and model these events as a competing risk.

Second, to simplify the model, I treat the event of interest and the competing event as non-repeatable. This implies that the model focuses solely on primary enactment of legislation changing a state's higher education governance system and subsequent enactments of similar legislation are ignored. This simplification is theoretically valid because all included spells are relevant but would be inefficient unless we are willing to assume that a model of secondary adoption is different from the model for primary adoption. This is a reasonable assumption given the complex nature of state policy adoption. In other words, a state that has already adopted a policy possesses a differing information set from a state that has not yet done so.

Finally, hazard modeling requires an assumption regarding the functional form of the time dependency of the hazard function. This research adopts a Weibull specification of the time dependency, which implies that the hazard rate is allowed to increase or decrease monotonically with respect to time (Butler, 2009). Often, researchers disagree about the appropriate parameterization of the time dependence in hazard modeling or are uncomfortable making any *a priori* assumptions regarding the time dependence's functional form. However, Manton, Singer, and Woodbury (1992) show that the specification of time dependency in hazard modeling introduces no serious bias into estimation as long as the actual distribution of time is smooth and does not contain spikes or discontinuities that are otherwise uncontrolled by the model's parameters, an assumption that is consistent with the current research. Ultimately, Weibull was chosen for purely pragmatic reasons: Namely, it is a relatively uncomplicated functional form and it is the most popular in the hazard model literature. However, the results presented here are robust to alternative specifications of the functional form of time dependence.

Finally, the model was alternatively specified in order to control for frailty, or unobserved heterogeneity. However, the likelihood-ratio test associated with the estimated frailty parameter failed to reject, indicating that unmeasured within-subject correlation is not significantly affecting the estimated standard errors. While people often have statistically significant idiosyncratic factors (or disturbances, in econometric terms), little theoretical or empirical evidence suggests that states and institutions are similar in this regard. Therefore, the results of the more efficient model—the model which does not include a frailty term—are reported here. The estimation results are presented in Table 4-3.

Table 4-3: Maximum Likelihood Estimation of the Hazard Rate of State Enactment of Legislation Decentralizing Higher Education Governance (Weibull Regression)

	Coef	Hazard Ratio	Std. Error ^A
Total tax revenue as a % of GSP (L)	-2.210	0.110**	0.877
Tax revenue decline (L) (D)	2.842	17.146***	1.057
Median household income (in tens of thousands)	-1.764	0.171	1.497
Pct. Nonwhite	0.084	1.088	0.068
Pct. 65+	0.453	1.573	0.368
Pct. 18-24	0.867	2.379	0.729
Pct. with 4+ year of education beyond HS	0.284	1.328	0.313
Pct. voting in last Presidential election	-0.253	0.777**	0.114
Pct. of state public FTE enrolled in 4-year institutions (L)	-0.122	0.885**	0.055
Pct. of state total FTE enrolled in private institutions (L)	0.071	1.074*	0.038
Total state FTE enrollment (in tens of thousands) (L)	-.053	0.949	0.035
Public FTE increase (L) (D)	-0.544	0.580	1.248
Student share of educational expenses (L)	0.105	1.110*	0.057
Republican government (D)	0.484	1.622	1.085
Democrat government (D)	2.580	13.201*	1.346
Coordinating board (D)	-0.351	0.704	0.968
Regional adoption	-0.337	0.714	5.413
Constant	5.394		12.696
p (time dependence in the Weibull distribution)		4.613***	1.620
Wald $\chi^2(17)$		44.650	
Prob > χ^2		<0.001	
Log likelihood		-11.258	

Notes: * p<.1, ** p<.05, *** p<.01; (L) means lagged, (D) means indicator variable;

^A Reported for coefficients

Discussion

The estimated model is highly statistically significant, as evidenced by the statistical significance of the Wald χ^2 statistic (Wald $\chi^2(17) = 44.650$, $p < .0001$). The estimated Weibull shape parameter, p , shows an increasing hazard over time ($p = 4.613$) which is highly statistically significant ($p < .01$), rejecting the null of a constant hazard with respect to time. In order to facilitate comparison of the magnitude of the effects of the independent variables on estimated average duration until policy adoption, elasticities were calculated using the mean values of the independent variables. These estimated elasticities are provided in Table 4-4.

Table 4-4: Elasticities of Explanatory Variables with Respect to Estimated Average Duration until Adoption of Decentralization

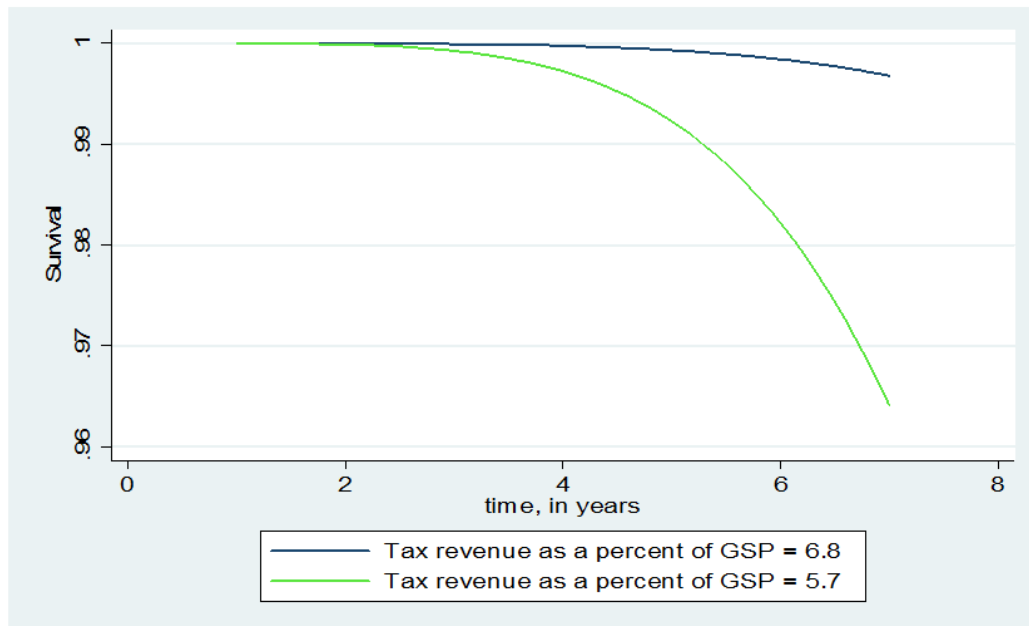
Variable	ey/ex	Std. Err.	z
Total tax revenue as a % of GSP (L)	2.732 **	1.289	2.12
Tax revenue decline (L) (D)	-0.263 **	0.107	-2.46
Median household income (in tens thousands)	1.835	1.593	1.15
Pct. Nonwhite	-0.349	0.312	-1.12
Pct. 65+	-1.197	1.156	-1.04
Pct. 18-24	-1.772	1.644	-1.08
Pct. with 4+ year of education beyond HS	-1.063	1.303	-0.82
Pct. voting in last Presidential election	3.259 ***	1.255	2.60
Pct. of state public FTE enrolled in 4-year institutions (L)	1.795 **	0.851	2.11
Pct. of state total FTE enrolled in private institutions (L)	-0.586 ***	0.217	-2.70
Total state FTE enrollment (in tens of thousands) (L)	0.212 *	0.126	1.68
Public FTE increase (L) (D)	0.097	0.222	0.44
Student share of educational expenses (L)	-0.789 *	0.432	-1.82
Republican government (D)	-0.025	0.055	-0.45
Democrat government (D)	-0.096 *	0.051	-1.89
Coordinating board (D)	0.035	0.100	0.35
Regional adoption	0.008	0.127	0.06

Notes: * $p < .1$, ** $p < .05$, *** $p < .01$; (L) means lagged, (D) means indicator variable

Consistent with expectation and the limited previous literature regarding decentralization of higher education governance, both measures of state fiscal health are highly statistically significant tested both jointly ($\chi^2(2) = 12.43$, $\text{prob} > \chi^2 = .0020$)

and individually and are signed consistent with expectation. Specifically, holding all else constant, a one standard deviation increase from the mean in tax revenue as a percentage of GSP (from 5.7 percent to 6.8 percent) yields an overall increase in average estimated duration until adoption of decentralization of almost 52 percent.⁵ This difference in average duration is displayed graphically by Figure 4-4.

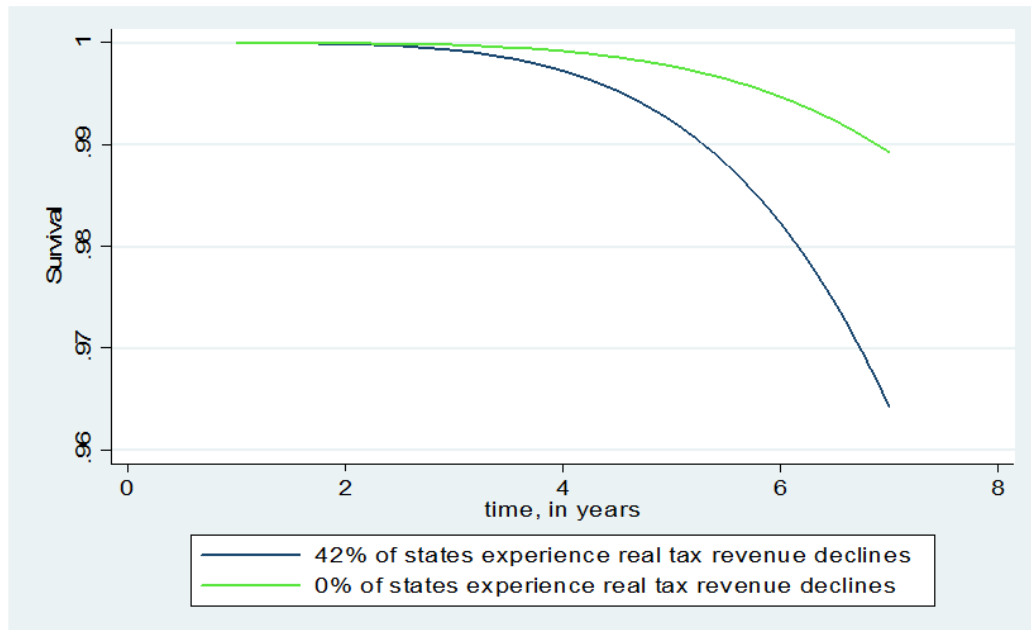
Figure 4-4: Estimated Survival Function, Disaggregated by Tax Effort



Similarly, average estimated duration until adoption would increase by over 26 percent if no states in the sample experienced had real dollar tax revenue declines, holding all other independent variables at their means. Figure 4-5 conveys this difference graphically.

⁵ This change in estimated duration is calculated as follows: A one standard deviation increase is equivalent to a 19.3 percent increase ($6.8/5.7$). This number (19.3) is then multiplied by 2.732, the elasticity provided in Table 4, which provides the percentage change in average duration associated with a one percent change in the relevant independent variable.

Figure 4-5: Estimated Survival Function, Disaggregated by Tax Revenue Decline



As these two variables combine to show, state fiscal stress greatly increases the probability of adoption of legislation that decentralizes higher education. This finding provides quantitative support for McLendon (2003a), whose qualitative study of higher education decentralization in three states concluded that, in those states, the problems stream was prepared for coupling by “state economic stagnation or decline [and] budget crisis” (p. 507).

Tested jointly, the variables that capture the impact of the state system for higher education fail to reach statistical significance at generally accepted levels ($\chi^2(6) = 7.51$, $\text{prob} > \chi^2 = .2759$), indicating that, generally speaking, the characteristics of the state’s existing system for higher education do not seem to influence the propensity of a state to adopt higher education governance decentralization. However, viewed individually, several variables do reach statistical significance. First, the state enrollment mix matters. States with relatively large two-year sectors (as compared to the four-year sector) are, all else equal, much more likely to decentralize. Given the differences between four-year institutions and community colleges in terms of mission and clientele, it is perhaps not unexpected that states with larger community college

enrollments have embraced decentralization to allow institutional flexibility in adapting to these contingencies.

Second, I find a marginally statistically significant ($p = .063$), positive relationship between the relative size of a state's private sector for higher education and the propensity to decentralize. One possible interpretation of this finding is that, consistent with the multiple streams framework, states are relying on internal emulation to propagate the policies stream in creating a window for policy change; in essence, states with successful and strong private sectors for higher education are drawing on the example of that sector when shaping the public sector. This finding is consistent with Hoxby (1994), who finds that public primary and secondary schools in areas with strong private schools evolved to act more like the private schools, both in terms of school characteristics, such as teacher pay, as well as student outcomes. However, given the statistically weak relationship between these two variables, the current research provides little more than suggestive evidence of this possibility. Finally, the variable associated with the student's share of higher education costs reaches marginal statistical significance but is signed oppositely to expectation: States in which students bear a relatively higher proportion of the costs associated with higher education are more likely to adopt decentralization.

Turning to state political variables, there is no evidence that partisan control of government, tested jointly, affects adoption of decentralization ($\chi^2(2) = 4.25$, $\text{prob} > \chi^2 = .1196$), although I do find weak evidence that Democrat-controlled legislatures are less likely to adopt decentralization than legislatures in which Republicans and Democrats split control. While previous literature finds single-party control of government is associated with policy adoption in other policy areas (Berry and Berry, 1990), the finding that partisanship doesn't matter for higher education decentralization is perhaps expected given the historically nonpartisan nature of higher education in the United States (Doyle, 2007; Gladieux & Wolanin, 1976). However, this does not mean that *politics* does not matter in the current context, only that *partisanship* does not.

McLendon, Deaton, and Hearn (2007) employ alternative measures of state politics and find that, consistent with the growing body of qualitative literature regarding higher education governance change as well as the multiple streams framework, political conflict is a critical component of governance change. Ultimately, as McLendon and others argue, much more work is needed to untangle the complex and evolving relationship between state politics and public higher education governance.

Interestingly, voter turnout is negatively related with propensity to decentralize and highly statistically significant. This is an unexpected finding which warrants further exploration. A rich literature in political science holds that elections are a primary mechanism through which governmental officials are held accountable to the public (Schumpeter, 1994). This implies that legislatures in states with comparatively higher voter turnout should, all else equal, display a greater degree of responsiveness to the demands of citizens and enact policies that reflect citizen preferences. Doyle's (2007) analysis of the effect of partisanship on higher education policy preferences finds that, generally speaking, public concern regarding higher education revolves around two issues: affordability and access. Are affordability and access impacted by governance configuration? Very little research has addressed this topic, and the few researchers that attempt to connect governance to higher education system characteristics reach differing conclusions. Volkwein and Malik (1997) find no connection between either institutional autonomy and campus characteristics or institutional quality while Lowry's (2001) cross-sectional analysis finds that, on average, decentralized institutions have higher tuition rates than institutions with less autonomy. Given these mixed results and the overall sparseness of the literature, it is difficult to make an empirical connection between governance centralization and public preferences for higher education.

However, this could be an example of perception trumping reality: Doyle's (2007) analysis also reveals a large degree of public distrust in institutions to honor the public's preferences when left to their own devices (16). If we assume that legislative behavior is at least weakly described by the Downsian model (Downs, 1957), this finding can be understood: Legislators in states with high degree of public participation are more likely

to be held accountable by their constituents and are, therefore, less likely to go against public opinion and decentralize higher education governance while legislators in states with less public accountability do not face the same potential punishment by decentralizing. This hypothesis could be tested in future research by expanding the current empirical model to include measures of public opinion regarding the trustworthiness of public higher education across states and over time and interacting these measures with voter turnout.

Finally, tested jointly ($\chi^2(4) = 5.39$, $\text{prob} > \chi^2 = .2497$) and individually, the socioeconomic and demographic characteristics of the state population do not affect on propensity to decentralize. Again, given the lack of theoretical and empirical evidence for a link between public preferences and higher education governance, this finding is not surprising and validates the omission of these variables as observed in the literature.

Conclusion

This research, drawing on Kingdon's multiple streams framework, provides insight into the complex process of state higher education governance change. While the existing literature focuses on the importance of politics for policy adoption, I find that state economic conditions strongly influence state adoption of higher education governance decentralization. Given the stark economic conditions currently facing most states, this is a finding that has serious potential ramifications for the future of higher education governance across the states.

Turning to the policies stream, I find little uniform support for either the regional policy diffusion or the internal determinants model, implying that much remains unknown regarding how states determine appropriate solutions to extant policy problems.

Kingdon compared the policies stream to a soup in which potential solutions churn, bubble, and percolate in a seemingly random process. Numerous researchers have emphasized that this randomness seems especially pronounced in the area of higher education governance where the largely qualitative literature emphasizes the influence

of the seemingly chaotic political process as well as the specific characteristics and personalities of the individuals involved.

However, this does not mean that researchers should abandon these streams of research in favor of lower hanging fruits. A more holistic understanding of the dynamic relationship between states and public institutions of higher education is critical to inform policymakers as they struggle to balance autonomy, responsiveness, and efficiency in state systems for higher education. As this research shows, alternative methodological approaches can yield additional insight in this regard, insight which can refute common knowledge, confirm prior supposition or simply interject additional nuance. However, much work remains. For instance, the public administration and political science literatures have made great advances in terms of expanding upon Berry and Berry's (1990, 1992) original definition of policy diffusion, allowing for more complex relationships between states than blind emulation (Sponsler, 2009). Integration of these newer measures offers potential new insights as to the formulation of the policies stream. Given the diverse and dynamic nature of higher education governance systems, this area remains ripe for expanding knowledge about how policy is determined.

Limitations

Finally, there are several important limitations to this research. First, due to the availability of reliable data regarding the dependent variable, the analysis is limited to only seven years. As such, the current analysis cannot speak about the antecedents of centralization as observation of enacted legislation regarding centralization was much more limited over the period analyzed. Further research is warranted to test the hypotheses proposed in the qualitative literature regarding the causes of centralization.

Second, in order to have enough observations of decentralization to justify multivariate analyses, the definition of "decentralization" utilized in this analysis is necessarily broad. It captures the entire spectrum of decentralizations which has a theoretical range of a small and nuanced which might only change a small element of a single aspect of the

balance of power between institutions and states to a wholesale restructuring of a state's system for higher education and everything in between. Ultimately, as more years of observations of states become possible, it would be useful to capture the magnitude of a given change in order to reflect the reality of the extent to which enacted legislation changes the state's "status quo" for management of public higher education. Further, the dependent variable as defined in this analysis also covers a range of substantive areas and includes decentralizations that are administrative, financial, or academic in nature. Future research should distinguish these substantive areas in order to permit a more nuanced analysis.

CHAPTER 5

CONNECTING GOVERNANCE TO INSTITUTIONAL PERFORMANCE: THE MARKET FOR HIGHER EDUCATION AND STUDENT DEGREE COMPLETION

Introduction

Defining the discussion of state management of public higher education is a longstanding debate regarding the most effective approach for maintaining and enhancing institutional accountability to the system's various stakeholders. Central to this debate is the tension between institutional autonomy and political control: While governments want public higher education to reflect societal preferences, institutional actors argue that academic freedom requires institutional sovereignty from governmental control (Nicholson-Crotty & Meier, 2003).

Historically, state governments have embraced the creation of bureaucratic agencies empowered with some degree of control over institutional behaviors. As many scholars have noted, several common approaches have emerged in this regard (Berdahl, 1971; Education Commission of the States, 1997, 2000, 2007; Glenny, 1959; McGuinness, et al., 1994). However, largely absent from the literature are quantitative studies that examine the impact of state higher education governance on the performance of public institutions.

The current research, drawing on a unique sample of 518 public, four-year institutions of higher education in the United States, attempts to fill this gap by analyzing the impact of market environment on one critical measure of institutional performance: graduation rates. Building on the classic principal-agent framework, I find that institutions in states with less competition for enrollments and more centralized bureaucratic control have systematically lower graduation rates than their peers operating in states with more decentralized governance structure and greater competition, suggesting that heavy-handed state approaches to management of public

higher education, however well intentioned, may be counterproductive to achieving state priorities.

Traditional State Approaches to Management of Public Higher Education

Historically, justification for governmental intervention into the provision of higher education has been based on the normative goal of equality of access to higher education regardless of socioeconomic status, a policy that is couched within a widely-held desire for social justice (Teixeira, Jongbloed, Amaral, & Dill, 2004). However, positive economic arguments have also been presented that justify intervention—namely, that the imperfectly competitive nature of the market for higher education warrants corrections through regulation and control.

While a rich descriptive literature exists regarding higher education governance, literature exploring the implications of the state governance structure for institutional performance in terms of outputs is limited to a series of articles by Payne and colleagues who broadly find that faculty productivity—in terms of overall number of publications—is higher at institutions in states with more decentralized governance arrangements (Knott & Payne, 2001, 2004; Payne & Roberts, 2004). They argue that decentralized governance structures “encourage university managers to emphasize the academic values of research, publication, and external grants more than undergraduate education and low tuition” (Knott & Payne, 2004, p. 17). In essence, Payne et al. argue that academics at institutions unfettered by state controls remain comparatively free to pursue self-interest and engage in high-prestige endeavors at the expense of the activities preferred by higher education’s external stakeholders. This argument is implicitly grounded in a principal-agent framework in which academics are empowered to shirk, from the perspective of external stakeholders, by the absence of direct state oversight and control.

However, a broad literature seems to agree that, even under conditions of strict control, effective and efficient state oversight of public higher education is difficult to achieve in practice. Institutions of higher education in the United States are multi-product firms

that produce a host of qualitatively differing outputs simultaneously, although production of these goods often involves overlapping use of resources (Cohn, Rhine, & Santos, 1989). A robust literature in public administration argues that under these conditions, regulatory costs are intrinsically high due to the difficulty of effective audit: While regulators can assess easily observable characteristics such as overall costs, the complex and multifaceted production function of institutions implies increased probability of residual information asymmetries surviving the audit process, enabling institutions to capture rents (Laffont & Tirole, 1993, p. 3). Bureaucrats face transactions costs in the creation and enforcement of regulation, which further offset efficiency gains through coordination (Laffont & Tirole, 1993; Williamson, 1975). Even under an ideal scenario of complete information, bounded rationality suggests that it is unlikely that a centrally planned market could achieve a fully efficient allocation of resources due to the fundamental underlying complexity of state systems of higher education (Hoenack & Pierro, 1990). From this perspective, many argue that government intervention into markets does not necessarily imply that inefficiencies will be overcome and market failures resolved; instead, the case may be that one kind of inefficiencies are simply supplanted by another.

Higher Education Markets and Public Policy

Drawing on a rich theoretical and empirical literature in economics and public administration, the current research argues that the existing literature has largely failed to consider a potentially critical ramification of increased state control and management of higher education in drawing conclusions about the benefit of centralization: decreased inter-institutional competition. Basic microeconomic theory advances the idea that enhanced market competition leads to increases in efficiency and gains in consumer surplus. However, conventional wisdom has held that the market for higher education sufficiently deviates from the stylized conditions required by conventional microeconomic theory as to limit the applicability of these theories to studies of higher education, an axiom that implicitly or explicitly permeates state efforts to regulate higher education (Glenny, 1959; Winston, 1999). Winston (1999), for instance, argues

that “economics and intuitions about for-profit business don’t just obscure what’s happening in colleges and universities, they can also seriously distort understanding and policy” (p. 34). Leslie and Johnson (1974) similarly conclude that “the perfectly competitive market model is inadequate and inappropriate as a policy basis for higher education” (p. 17).

Is the conventional wisdom true? Certainly the market for higher education in the United States is far from the ideal, perfectly competitive market of microeconomics textbooks for a host of reasons (Dill & Soo, 2004; Hoxby, 1997; Winston, 1999). However, a rich literature in economics and other fields has largely agreed that the benefits of increased competition are surprisingly robust to market distortions. For example, much empirical evidence concludes that increased competition between hospitals exerts downward pressure on prices and improves patient outcomes, holding all else constant (Gaynor & Vogt, 2003; Keeler, Melnick, & Zwanziger, 1999; Kessler & McClellan, 2000; Noether, 1988). This evidence is sufficiently convincing that the Justice Department and the Federal Trade Commission have argued against hospital consolidation on the grounds that patient outcomes would be negatively impacted due to decreased competition (Ho & Hamilton, 2000). Similar benefits of increased competition have been observed in other imperfectly competitive markets such as transportation (Mazzeo, 2003) and primary and secondary education (Borland & Howsen, 1992, 1993, 1996; Hoxby, 2000; Sandström & Bergström, 2005).

How well does the classic microeconomic theory of the firm describe public institutions of higher education? Certainly, it is difficult to argue that the market for higher education as it exists in the United States approximates a perfectly competitive market. However, this does not mean that the theory of the firm does not provide a good framework for understanding the actions of public universities and colleges. To this end, several scholars have made strong theoretical and empirical arguments that the market for higher education is best understood through the application of a monopolistic competition model (Garvin, 1980; Halstead, 1991; Paulsen, 2000). Under

conditions of monopolistic competition, firms do not produce goods that are perfect substitutes as under a perfectly competitive market. Instead, the products of firms are differentiated, possessing unique characteristics which make them imperfect substitutes for each other. As such, firms are not purely price takers, but possess some degree of monopoly market power, which is determined in relation to the strength of consumer preferences for a specific firm's product and the availability of acceptable substitutes. Finally, product differentiation also leads to non-price competition among producers which takes many forms but is designed to influence the slope of consumer demand curves, making the demand curve of current consumers more inelastic and the demand curve of potential consumers more elastic (Paulsen, 2000).

As Paulsen (2000) and others notes, these characteristics fairly accurately describe the conditions of the market for higher education in the United States. If universities are behaving as monopolistic competitors, this implies that they are, to a varying degree, susceptible to the influence of market forces. If so, a cursory review of the history of higher education governance reveals that many states appear to have largely ignored a potentially potent and particularly cost-efficient policy instrument in favor of heavy-handed regulation and control. However, to date, little empirical literature exists which tests the susceptibility of higher education to the influence of market forces.⁶ This is a critical gap in the empirical literature with important ramifications for states as they re-evaluate higher education governance approaches to deal with the realities of public higher education: dramatic increases in demand, increased student diversity across broad socioeconomic and demographic characteristics, and declining public financial support of higher education due to declining state revenues coupled with significant growth in other state expenditure categories such as Medicaid and corrections.

A common criticism of the utilization of microeconomic theories to understand institutional behaviors is the differing objective functions of private firms and institutions of higher education. Regarding the private firm, the objective function is

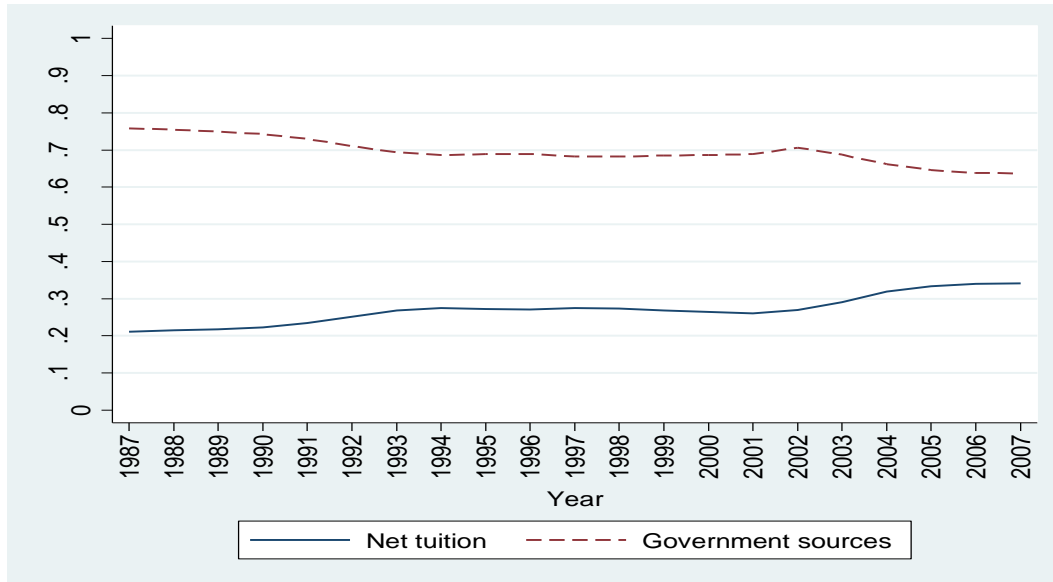
⁶ See Hoxby (1997) for a notable exception.

straightforward: maximize profits for shareholders. The objective function of the university is much more ambiguous. Much empirical and theoretical literature is devoted to developing a better understanding of the objective function of the university. While many argue that institutions are unitary actors driven by the pursuit of prestige (Brewer, et al., 2004; Ehrenberg, 1999; Garvin, 1980; James, 1990b), other scholars have argued that the decentralized nature of decision making at institutions of higher education leaves them best described as “organized anarchies” that lack coherent and consistent direction (Cohen, March, & Olsen, 1972). From this perspective, it is not clear that institutions are sufficiently organized to possess a common, cohesive and coherent objective function in any useful sense (Rothschild & White, 1993).

As Massy (2004) argues, a sufficiently generic objective function for institutions of higher education is that they seek to maximize objectives that reflect the preferences of the internal stakeholders of the institution itself, some of which may be activities valued by private markets, others of which may be ignored by markets. Paulsen (2000) reaches a similar conclusion, arguing that the objective function of institutions is to maximize discretionary budgets, which are then spent according to the preferences of institutional bureaucrats. Regardless of the exact specification of the institutional objective function, all public institutions of higher education are subject to the same constraint: Operating revenues must equal operating costs. However, critically, this does not mean that each individual activity undertaken by institutions must be self-supporting; institutions can cross-subsidize activities that are valued by institutional administrators with economic profits earned from activities that are less valued but economically profitable. Critically, note that competition and cross-subsidization are inversely related: As the market for higher education converges on a perfectly competitive market, the economic profits that make cross-subsidization possible disappear. While institutions generate economic profits from a number of sources (Bok, 2003), for the majority of public institutions, tuition revenue is overwhelmingly the largest source of commercial revenue; additionally, analysis of institutional financial data over time led Wellman et al. (2009) to

conclude that “the dominant revenue pattern across public institutions [is a] growing dependence on tuitions as a primary source of revenue” (p. 13), a trend that is illustrated by Figure 5-1 below:

Figure 5-1: Institutional Operating Revenues by Source, 1987-2007*



* Operating revenues includes net tuition; federal, state, and local appropriations, grants, and contracts; private gifts, grants, and contracts; and endowment earnings.
Source: The Delta Cost Project

Returning to the principal-agent framework, from the perspective of the external stakeholders of higher education, this cross-subsidization represents shirking: money that students pay in tuition is redirected by institutions to another purpose, reducing the value of the education provided. Note that expenditures on education and expenditures on other activities do not have to be zero-sum for shirking to occur. Much literature agrees that institutions of higher education benefit from economies of scope, in which efficiencies are gained through joint production (Koshal & Koshal, 1999). However, while economies of scope can offset the negative effect of cross-subsidization on undergraduate education, it cannot completely mitigate it: Ultimately, a dollar invested elsewhere is unlikely to have the benefit on undergraduate education associated with a dollar invested directly for this purpose.

The traditional view is that institutions are constrained in their ability to cross-subsidize through the creation of higher education governance arrangements empowered to limit and control institutional behaviors. However, as discussed above, even if we are willing to assume that the state is acting as a benevolent central planner, states are inherently limited in their ability to effectively constrain institutions by the underlying complexity and ambiguity associated with measuring the effectiveness and efficiency of higher education. Further, any efficiency gains due to increased institutional control are offset by the direct and indirect bureaucratic costs incurred through regulation.

The current research puts forth a different argument: Institutions are constrained in their ability to cross-subsidize not by the mechanisms of state bureaucratic control directly but instead by their own inherent market power, which itself can be influenced by state bureaucratic control. This leads to the two research hypotheses tested in this analysis:

H1. Institutions operating in unconcentrated markets will have a greater emphasis on undergraduate education, ceteris paribus.

This hypothesis results from a straightforward application of the monopolistic competition model: as the number of institutions included in the choice set of potential students decreases, the opportunity for remaining institutions to capture economic profit increases. However, an inherent difficulty arises in calculating the market concentration due to the difficulty in accurately defining the market in which an institution operates. Institutions compete for enrollments (and tuition dollars) along myriad dimensions that reflect the diversity of student preferences. Of the two given the most attention in the literature, quality and location, only the latter is considered in the current analysis due to the difficulty of determining appropriate peer institutions along dimensions of quality. However, there is much evidence which suggests that geography is the most important factor in the matriculation decision of many students. Hoxby (2000), for example, drawing on surveys of student migration in 1994, estimates that 84 percent of students attend a college located in their state of residence. While

this reflects the fact that many students simply want to attend universities closer to home, it is also reflective of student response to financial incentives due to the difference in prices between in-state and out-of-state tuition at most public universities: Recent data from the College Board shows that the difference between average in-state and out-of-state tuition surcharges at public, four-year institutions amounted to over \$4,000 per year in 2009, a differential that has grown significantly in the past decade. Similarly, many states have adopted merit aid programs that provide significant financial assistance to high ability students but are only applicable to students who attend a university located in their state of residence (Doyle, 2006a).

H2. Institutions operating in states with less centralized control over public higher education will have a greater emphasis on undergraduate education, ceteris paribus.

A second influence on institutional market power is the structure of the state's system for higher education governance. The extant literature largely argues that centralized structures should force institutions to honor the preferences of higher education's external stakeholders, which would lead us to think that higher centralization should yield higher institutional graduation rates. However, as discussed above, states are limited in their ability to enhance institutional accountability due to the underlying complexity of the higher education production function. Additionally, this argument overlooks the fact that more centralized governance structures are designed to eliminate inter-institutional competition thereby giving institutions operating in highly centralized states a *de facto* boost in market power by eliminating their competition by fiat.

Research Design

In order to test the two research hypotheses, a dataset comprised of relevant student and institutional characteristics from public, four-year institutions of higher education in the United States was assembled. The majority of the data utilized in this study are from the National Center for Education Statistics' Integrated Postsecondary Education Database (NCES IPEDS). All institutional characteristics are from the year 2002. The

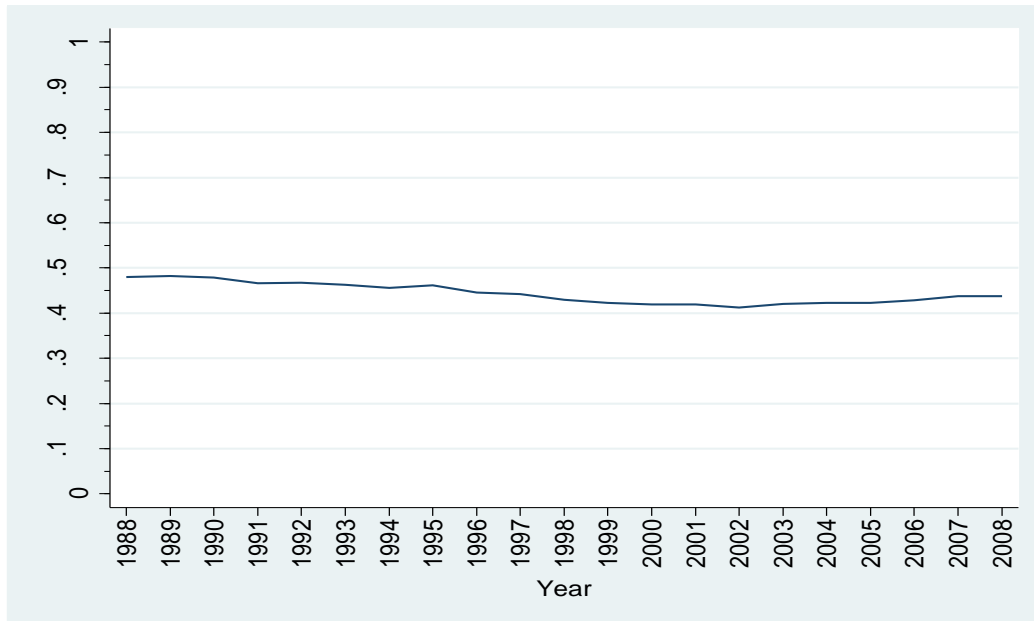
institutional expenditure variables utilized in the analysis represent the average of each respective expenditure category from 2002 to 2008 and are divided by FTE enrollment in order to facilitate comparisons across institutions of varied sizes. Data regarding state higher education governance structures were compiled utilizing data from the ECS and supplemented by data from SHEEO. National Service Academies, institutions located in U.S. territories, and institutions for which complete data were not available were excluded from the analysis. The final sample includes 518 universities from an initial universe of 689 public, four-year institutions in the United States and its territories.

Dependent Variable

The current research, utilizing a broad sample of public, four-year universities in the United States, tests the impacts of inter-institutional competition utilizing one important measure of institutional focus on undergraduate education: graduation rates.

Degree completion rates at public, four-year institutions of higher education in the United States have, on average, slightly but steadily eroded over the last two decades (ACT, 2008). Figure 5-2 graphically displays this trend over time.

Figure 5-2: Average 6-year Graduation Rate at Public, 4-year Institutions, 1988-2008



Source: American College Testing Program

As this figure shows, less than half of all students who enroll in a public, four-year institution leave that institution with a baccalaureate degree. However, what is concealed by this figure is the extent of the variation in graduation rates that exists between institutions. Looking only at the 2002 cohort, data from the National Center for Education Statistics' Integrated Postsecondary Education Database reveal an average institutional six-year graduation rate of 43.9 percent, with a standard deviation of 17.87 percent. As these numbers reveal, while mean institutional degree completion rates have remained largely stable over time, there also exists wide variation across institutions in terms of student degree completion and persistence, which the current research seeks to explain.

Key Independent Variables

Two variables were included in the model to capture differences in state market conditions for higher education. First, a variable was included that captures the concentration of a state's market for higher education. Borrowing from industrial

economics, this variable was operationalized as a Herfindahl-Hirschman Index (HHI) of market concentration for each state. The HHI was calculated as:

$$H_j = \sum_{i_j=1}^{N_j} s_{ij}^2$$

Where s_{ij} represents the enrollment share of institution i (expressed as a whole number) in state j , and N_j is the total number of institutions (public and private) in state j . This index incorporates several relevant aspects of concentration: It decreases with the number of competing institutions in an institution's market, with the shares of enrollments that come from these other institutions, and with the evenness of shares across all institutions (Hoxby, 1997, p. 9). Numerically, the theoretical range of this index is from $10,000/N_j$ to 10,000, with $10,000/N_j$ representing a state in which enrollment is split equally among all institutions in the state and 10,000 representing a state with only one institution that captures the entire state's enrollment. Following the guidelines set by the United States Department of Justice in evaluating the impact of mergers on market competition (2003; 1997), states with HHIs below 1,000 are considered to be unconcentrated; states with HHIs between 1,000 and 1,800 are considered to be moderately concentrated; and states with HHIs above 1,800 are considered to be highly concentrated. The HHI is commonly used in the economic literature to measure market competition across a number of substantive areas including banking (Berger & Hannan, 1989), health care (Dranove, Shanley, & White, 1993), transportation (Stavins, 2001), and secondary education (Borland & Howsen, 1992, 1993, 1996; Hoxby, 2000).

Second, an indicator variable was included which classifies the state's higher education governance system (Berdahl, 1971; Education Commission of the States, 1997, 2000, 2007; Glenny, 1959; McGuinness, et al., 1994). *Consolidated governing boards* represent the most powerful form of governance. These boards supplant institutional boards and have direct control over institutional internal policies, finance, and

programmatic offerings as well as coordination between institutions. *Strong regulatory coordinating boards* are boards that are empowered with ultimate authority regarding institutional budgets and programmatic control but lack power over internal decision making. *Weak regulatory coordinating boards* have curtailed budgetary authority as compared to strong regulatory boards but still coordinate and control institutional programmatic offerings. *Advisory coordinating boards* lack ultimate authority over both institutional budgets and programmatic offerings and are largely relegated to a consultative role in shaping institutional behavior. Finally, *voluntary coordination* denotes the lack of a state-level board that oversees public higher education. In states adopting this approach, coordination occurs between institutions on a discretionary basis and is not compulsory.⁷ In essence, state approaches to oversight of public higher education can be placed on a continuum that denotes the extent to which institutional autonomy is curtailed and control is centralized, with voluntary coordination on one extreme and the consolidated governing board on the other.

Control Variables

Based on the extant literature, a host of variables was included in the model to control for critical differences across institutions that impact graduation rates. First, variables were included to capture institutional per-FTE expenditures across a broad range of categories.⁸ Regarding the impact of expenditures on graduation rates, two competing schools of thought emerge. If we make the conventional assumption that expenditures are zero-sum (Lowry, 2001a), we would straightforwardly expect that expenditures directly related to academic achievement should show a positive and significant impact on graduation rates, while all others should have a negative impact on degree completion as each dollar spent in these categories necessarily represents a dollar not spent on academic endeavors. However, a robust literature in education argues that

⁷ See Chapters 2 and 3 of this dissertation for a more thorough review of the history and distribution of these boards in the various states.

⁸ See Appendix I for specific definitions of the expenditure variables included in the analysis.

myriad factors matter to student persistence beyond the academic characteristics of institutions (Cabrera, Nora, & Castaneda, 1993; Kuh, 1995). From this perspective, institutional expenditures in non-academic areas could have indirect impacts on undergraduate degree completion. Based on this discussion, while we can unequivocally expect a positive impact on expenditures for instruction and academic support, the impact of all other expenditure categories remains ambiguous. A variable is also included that measures the percentage of institutional operating revenues derived from tuition dollars. All else equal, we would expect that institutions with a higher reliance on tuition dollars should produce outputs that more closely align with the preferences of external stakeholders and, therefore, would have higher graduation rates.

The sign of the coefficient associated with the hospital dummy variable also cannot be signed a priori. Institutions that focus on the provision and delivery of health care may do so at the expense of undergraduate education. Alternatively, it is conceivable that the health research associated with university hospitals could complement undergraduate education and, therefore, could positively affect student outcomes. Consistent with the literature, the expected sign associated with the indicator variable denoting Minority-Serving Institution (MSI) is positive. This expectation is based on the robust literature, which largely agrees that MSI attendance has positive impacts on minority degree completion, all else equal. FTE enrollment is expected to be positively signed, reflecting economies of scale in education; however, the quadratic term is expected to be negatively signed, reflecting the diminishing marginal returns of additional enrollments due to the fixed nature of institutional capital assets. The expected signs of the Carnegie classification dummy variables are unknown as this research represents a first attempt at comparing graduation rates across Carnegie categories. On one hand, we could suspect that the focus of the Carnegie Baccalaureate institutions on undergraduate teaching could yield higher graduation rates; on the other, it is plausible that the Carnegie Doctoral and Carnegie Master's institutions attract higher quality faculty who are more effective educators.

Increased numbers of minority students and students receiving federal grant aid are expected to be negatively associated with graduation rates. Much literature largely agrees that minority students are less likely to persist to degree completion than their white counterparts for a host of reasons (Smedley, Myers, & Harrell, 1993; Swail, Redd, & Perna, 2003). Similarly, much research has found that students of lower socioeconomic status are less likely to persist to degrees than their wealthier peers, all else equal (Titus, 2006). Increased institutional selectivity is expected to be positively related to graduation rates (Gansemer-Topf & Schuh, 2006; Melguizo, 2008). The reasoning for this is straightforward: Highly selective institutions have more control over their student populations and can choose to admit only those with higher estimated probabilities of degree completion. Finally, it is expected that institutions located in large, urban areas will have lower degree completion rates than more rural institutions. This is simply due to the increased opportunity costs faced by students at these institutions.

Table 5-1 provides a brief summary of the variables utilized in the analysis.

Table 5-1: Descriptive Statistics

Variable	Mean	Std. Dev.
Six-year graduation rate	45.29	16.87
<u>Institutional expenditures</u>[*]		
Instruction per FTE	7172.80	3088.57
Research per FTE	2069.91	3999.55
Public service per FTE	1015.72	1444.63
Academic support per FTE	1770.17	1072.70
Student services per FTE	1360.71	650.80
Institutional support per FTE	2108.58	1075.70
Operation/maintenance per FTE	1798.73	920.83
Scholarships and fellowships per FTE	1018.94	662.94
<u>Institutional characteristics</u>		
Full time equivalent enrollment	10288.64	9094.87
University connected to a hospital ^D	0.05	0.22
In-state average tuition and fees [*]	5726.19	1933.01
Percent of full-time freshmen non-white	29.43	27.23

Table 5-1 (continued)

Minority-serving institution (HBCU, HSI or TCU) ^D	0.14	0.34
<u>Carnegie Classification</u>		
Doctoral/Research University-Extensive ^{D,O}	0.19	0.39
Doctoral/Research University-Intensive ^D	0.12	0.32
Master's College or University ^D	0.49	0.50
Baccalaureate Colleges - Liberal Arts ^D	0.04	0.19
Baccalaureate Colleges - General ^D	0.08	0.28
Associates and Baccalaureate/Associates ^D	0.06	0.24
Specialized Institutions ^D	0.03	0.17
<u>Institutional Selectivity</u>		
Highly selective ^{D,O}	0.17	0.37
Moderately selective ^D	0.53	0.50
Minimally selective ^D	0.18	0.39
Open admission ^D	0.12	0.33
<u>Institutional Location</u>		
Large city ^{D,O}	0.14	0.35
Mid-sized city ^D	0.32	0.47
Urban fringe of large city ^D	0.11	0.31
Urban fringe of mid-sized city ^D	0.08	0.28
Large town ^D	0.07	0.25
Small town ^D	0.22	0.42
Rural ^D	0.05	0.22
<u>Percentage of full-time freshmen who received federal grants, centile ranges</u>		
0-24th centile ^{D,O}	0.24	0.43
25-49th centile ^D	0.25	0.43
50-74th centile ^D	0.25	0.44
75-99th centile ^D	0.26	0.44
<u>State Governance Structure</u>		
Voluntary coordination ^{D,O}	0.03	0.17
Advisory coordinating board ^D	0.07	0.25
Weak regulatory coordinating board ^D	0.24	0.43
Strong regulatory coordinating board ^D	0.36	0.48
Consolidated governing board ^D	0.30	0.46
Tuition revenue as a percentage of total operating revenue	44.17	15.61
Herfindahl index of market concentration	798.23	732.61

D = indicator variable, O = omitted (reference) category

* in constant (2000) dollars, adjusted by the Consumer Price Index

Empirical Estimation

In order to account for the possibility of unobserved heterogeneity between states, a random effects generalized least squares regression model was utilized. The model is specified as follows:

$$R_{ij} = \beta_1 F_{ij} + \beta_2 C_{ij} + \beta_3 G_{ij} + \beta_4 H_{ij} + u_i + e_{ij}$$

Where R_{ij} is the six year graduation rate of institution i in state j ; F_{ij} is a vector of institutional per-FTE expenditures of institution i in state j ; C_{ij} is a vector of institutional characteristics of institution i in state j ; G_{ij} represents the state governance structure associated with institution i in state j ; H_{ij} represents the market concentration faced by institution i in state j ; u_i represents the institution-specific random intercept and e_{ij} is the residual.

Table 5-2 presents the results of the regression. Standard errors were calculated using the Huber-White correction for heteroskedasticity and are clustered on states.

Table 5-2: Regression Results

	Coef.	Std. Err.
<u>State Governance Structure</u>		
Advisory coordinating board ^D	15.296 ***	4.793
Weak coordinating board ^D	8.719 **	3.700
Strong coordinating board ^D	1.736	3.406
Consolidated governing board ^D	4.234	3.748
<u>Higher Education Market Concentration</u>		
Moderately concentrated ^D	-1.042	1.635
Highly concentrated ^D	-7.136 **	2.903
<u>Institutional expenditures (\$000)</u>		
Instruction per FTE	0.789 ***	0.192
Research per FTE	0.245	0.179
Public service per FTE	-0.622 **	0.249
Academic support per FTE	0.586	0.377
Student services per FTE	0.199	0.895
Institutional support per FTE	-1.392 **	0.550
Operation/maintenance per FTE	0.865	0.668
Scholarships and fellowships per FTE	-1.063	0.658

Table 5-2 (continued)Carnegie Classification

Doctoral/Research University-Intensive ^D	-4.015 ***	1.378
Master's College or University ^D	-5.495 ***	1.557
Baccalaureate Colleges - Liberal Arts ^D	-4.543 *	2.724
Baccalaureate Colleges - General ^D	-7.036 ***	1.890
Associates and Baccalaureate/Associates ^D	-15.348 ***	2.359
Specialized Institutions ^D	-5.441 **	2.494

Institutional Selectivity

Moderately selective ^D	-8.027 ***	1.661
Minimally selective ^D	-11.265 ***	2.415
Open admission ^D	-14.182 ***	2.306

Pct of full-time freshmen receiving federal grants

25-49th centile ^D	-4.159 ***	1.097
50-74th centile ^D	-6.571 ***	1.185
75-99th centile ^D	-8.119 ***	1.296
Percent of full-time freshmen non-white	-0.432 ***	0.057
Percent of full-time freshmen non-white, squared	0.003 ***	0.001
Full time equivalent enrollment	0.341 *	0.181
Full time equivalent enrollment, squared	0.001	0.004

Institutional Location

Mid-sized city ^D	6.514 ***	1.098
Urban fringe of large city ^D	3.795 ***	1.305
Urban fringe of mid-sized city ^D	5.317 ***	1.648
Large town ^D	6.193 ***	1.744
Small town ^D	9.247 ***	1.422
Rural ^D	9.003 ***	2.194
Minority-serving institution ^D	1.921	2.557
University connected to a hospital ^D	-3.981 **	1.875
Tuition revenue as a % of total operating revenue	4.231	6.074
In-state average tuition and fees (\$000)	1.696 ***	0.395
Constant	42.722 ***	6.396

D = indicator variable, *** p<.01, **p<.05, *p<.1

N= 518; R² = .7748 (overall), .7642 (within), .7624 (between)

Wald chi²(40) = 36428.15; prob > chi² <.0001

Discussion

The specified model appears to predict institutional graduation rates with a surprisingly high degree of accuracy: Specifically, the *r*-squared indicates that the regression model as specified explains over 77 percent of the observed variation in institutional six-year graduation rates. This is a surprisingly high value given that, contrary to much of the most frequently cited literature on student persistence, the regression model as specified includes no measures of student engagement, satisfaction, or integration—variables that a large vein of the existing literature argue are critical to understanding differences in student outcomes across institutions. This finding adds to the growing body of recent literature that questions the causal link between student self-assessed satisfaction and engagement and student outcomes (Carini, Kuh, & Klein, 2006; Gordon, Ludlum, & Hoey, 2008; Melguizo, 2008).

Inter-institutional Competition

Consistent with theoretical expectation, this research finds empirical evidence supporting both research hypotheses, indicating that institutional behavior is influenced by the degree of competition faced by the institution. First, the coefficients associated with the two dummy variables derived from the Herfindahl-Hirschman Index of institutional concentration are both negatively signed, although only the variable associated with “highly concentrated” achieves statistical significance. This means that, compared to institutions operating in states where enrollments are highly concentrated, institutions in states that face greater competition for enrollments have graduation rates nearly 7.5 percent higher on average, holding all else constant. This exogenous impact is only slightly smaller than the estimated difference between attendance at a highly selective institution and attendance at an institution with open admission or roughly equivalent to an increase in instructional expenditures of a little bit less than \$10,000 per FTE enrolled student, holding all else constant.

The findings regarding the impact on state higher education governance are a bit more nuanced. First, broadly speaking, the results of a joint hypothesis test on the four

dummy variables representing board types show that higher education governance structures matter in predicting graduation rates ($\chi^2(4) = 26.86$, $p > \chi^2 < .0001$), even after controlling for all the relevant institutional characteristics included in the model. However, as the analysis reveals, not all governance structures have an equal impact. Specifically, this analysis shows that low levels of governance centralization—advisory coordinating boards and weak regulatory boards—have a substantively and statistically significant positive impact on graduation rates, holding all else constant (15.2 percent and 8.4 percent, respectively). However, states that have high levels of centralization (strong regulatory coordination boards and consolidated governing boards) show no statistically significant difference from the reference category (voluntary coordination).

Control Variables

As one might expect, institutional selectivity has a large and statistically significant impact on degree completion. Specifically, this analysis reveals that there is a particularly pronounced gap between institutions coded as “very selective” and “moderately selective,” which translates to an over eight percent decline in graduation rate, holding all else constant. The negative impact persists as selectivity decreases, with institutions suffering a three to four percent drop in expected graduation rate for each successive decrease in selectivity.

Carnegie classification also has a strong impact on institutional graduation rates even after controlling for institutional selectivity and other variables included in the model. Specifically, this analysis shows that students attending an institution classified as “Doctoral/Research University-Extensive” are generally more likely to persist to degree than their peers at other types of institutions, all else equal. However, the negative effects of attendance at a different type of institution do not differ much from each other, with the exception of institutions classified as “Associates and Baccalaureate/Associates,” which have a much more pronounced negative impact on degree completion—a finding that is not unexpected given that the primary focus of these institutions is on two-year rather than four-year degrees. In general, these

findings suggest that, contrary to common perception, matriculation to research institutions does not negatively impact student persistence, holding all else constant; further, there appears to be no distinct advantage in terms of probability of degree completion to attendance at a primarily baccalaureate college or university despite the anecdotal evidence to the contrary.

Interestingly, the coefficient associated with the hospital dummy variable is negative and statistically significant, suggesting that university-run hospitals, holding all else constant, seem to divert institutional focus from undergraduate education—a penalty that is larger than that associated with moving from a moderately to a minimally selective institution. Certainly, further research is warranted to explore this finding.

Turning to characteristics of the student body, increased enrollment of students of lower socioeconomic backgrounds is negatively associated with student persistence. This is consistent with the extant literature and expectation. The effect of minority student enrollment is similar except that the coefficient associated with the quadratic term is positive and statistically significant. Specifically, this analysis finds that negative effect of additional minority enrollments grows until the student body reaches 68 percent minority students, which is associated with a 14.3 percent decrease in degree completion. Beyond this point, the marginal impact of additional minority students becomes positive, although even at 100 percent minority the aggregate effect on degree completion remains negative. This is an interesting finding which is consistent with Hall (1999), who finds qualitative evidence that black students attending predominantly white institutions (PWIs) often feel alienated or isolated until a “critical mass” of minority enrollment is reached, which counteracts these negative feelings. Finally, institutional size has a positive and statistically significant impact on degree completion, consistent with increasing returns to scale in the provision of education. A back-of-the-envelope calculation suggests that increasing returns to scale continue until FTE enrollment exceeds 77,000 students, well beyond the range observed in the data.

Consistent with expectation, a joint hypothesis test indicated that institutional expenditures are statistically significant predictors of graduation rates, holding all else constant ($\chi^2(8) = 62.27$, $\text{Prob} > \chi^2 < .0001$). Consistent with expectations, increased expenditures on instruction have a positive and statistically significant impact on graduation rates. Conversely, increased expenditures for public service and institutional support have a negative and statistically significant impact on graduation rates. All other categories of expenditures were found to be unrelated to student degree persistence. These findings are largely consistent with the extant literature (Gansemer-Topf & Schuh, 2006; Ryan, 2004; Titus, 2004; Toutkoushian & Smart, 2001). Further, while the sign of the coefficient associated with the percentage of total operating revenues derived from tuition is positively signed consistent with expectation, it fails to reach statistical significance at generally-accepted levels.

Finally, institutional locale proves to be a statistically significant predictor of graduation rates. Specifically, students attending institutions in large cities are much less likely to persist to degree than their peers in other locales, especially those attending schools in small towns or rural areas. Two potential explanations for this finding emerge. First, this could be reflective of the additional opportunity costs associated with university attendance in large cities: More career opportunities exist in big cities, all else equal, which may lure students away from institutions before a degree is obtained. Second, this could also be an artifact of the way that degree completion is defined in IPEDS, which will be discussed in greater detail below. Ultimately, as student unit-record data systems become more prevalent, these hypotheses can be tested.

Conclusion

This research has several critical implications. First, it has shown that institutional graduation rates are quite predictable utilizing only institutional-level data. While research projects such as the National Survey of Student Engagement provide institutions with valuable data regarding student engagement and satisfaction, this

research suggests that these measures may be somewhat endogenously determined and not causally linked to student outcomes such as degree completion.

Consistent with expectation and the analogous literature in other substantive areas, I find strong evidence that institutions of higher education are indeed impacted by the effects of competition. Institutions operating in unconcentrated markets produce outputs that are more closely aligned with the preferences of external stakeholders than their peers that are unfettered by competitive forces. This finding contributes to an emerging body of literature that collectively provides a strong rebuke to scholars who have argued against the application of economic principles to the study of education in general and higher education in particular.

The extant literature suggests several potential mechanisms through which this effect can occur, the most obvious being that students attending institutions in concentrated states face higher opportunity costs associated with transfer, making transfer less likely and student demand curves less elastic. More complex explanations revolve around the informational capabilities of consumers in relation to market competition. First, the mere presence of substitutes (however imperfect) conveys informational advantages to consumers by permitting them to compare the relative value offered by each institution (Nelson, 1974). The argument can be made, from a theoretical standpoint, that this informational advantage is enhanced in a monopolistically competitive market as producers have strong incentives to advertise to attempt to protect or expand market share, although to date no empirical research has tested this axiom with regard to higher education.

Finally, I find unambiguous evidence that, holding all else constant, the posture of a state's system for management of public higher education influences degree completion. Specifically, the results show a quadratic effect of sorts with regard to centralization: States with relatively decentralized governance structures perform significantly better than both states lacking governance arrangements and those with highly centralized governance structures. While not entirely consistent with

expectation, this finding suggests that students are best benefitted by state governments content to wear the velvet glove instead of the iron fist. As Jongbloed (2004) argues, while careful government intervention can be invaluable in overcoming market failure and establishing trust and transparency, regulation is nonetheless an “imperfect substitute for competition due to transactions costs and other economic costs of non-market (government) failure” (p. 108).

Ultimately, while elsewhere the argument has been made that institutional graduation rates are largely attributable to factors beyond institutional control (Astin, 2004), the current research provides empirical evidence that the impact of institutional behaviors on student degree completion is not trivial. Institutions facing decreased competition, be it through market structure or state regulation of higher education, appear to reduce focus on undergraduate education and thereby capture economic rents to use elsewhere. Conversely, institutions facing competition respond by increasing degree completion, although the mechanisms through which institutions achieve this increase in productivity remain unknown and likely vary across institutions. Given the powerful positive effect of competition on student degree attainment presented here, states would be wise to pay close attention to their management of public higher education to ensure these gains are not lost due to purposeful overregulation or as an unintentional consequence of the natural evolution of institutions over time.

Limitations

Finally, there are several important limitations to this research. First, the graduation rates utilized in the analysis have several potentially important deficiencies. They are reported by institutions to IPEDS at the institutional level, meaning that a student who begins her academic career at one institution but earns a degree from another is counted by IPEDS as a non-completer even if the degree is completed within the specified six year timeframe. Similarly, a student who drops to part-time enrollment or takes time off and completes a degree beyond the six year period is also treated as a non-completer. While student-level datasets are available through IPEDS, much will

remain unknown until state efforts to create and link student unit record databases are realized.

Second, institutional graduation rates are, at best, a proxy measure for what we really care about regarding higher education: student outcomes. A degree is ultimately only a piece of paper; it has no inherent worth beyond its function as a signal of quality to employers and society at large. If institutions are compromising on quality in favor of enhanced degree production, the degree's signaling power is diluted. While the federal government has encouraged states to develop capacities to track students from higher education to the job market and beyond, efforts in this regard remain piecemeal and access to such data by researchers remains limited.

Finally, this research only measures one dimension of inter-institutional competition: geographic location. Certainly, while in-state institutions compete for enrollments with each other to some degree, institutions also compete with other institutions across state borders and along a number of other important dimensions, including quality. Future research, building on the current analysis, should move toward a more holistic and multivariate definition of competition in order to more accurately model the decision making process of imperfectly competitive institutions of higher education in the United States.

CHAPTER 6

SUMMARY, CONCLUSIONS AND RESEARCH PROSPECTS

Dissertation Summary

This dissertation encompasses empirical studies that explore state governance of public higher education. Chapter 2 begins with a historical overview of the evolution of higher education governance in the United States that starts with the founding of the first institutions of higher education in the Colonies and culminates with the flurry of proposed governance change that defined the late 1990s and early 2000s. This chapter concludes with an overview of the trends in recent higher education governance change, finding that although previous decades have been demarcated by a clear overarching preference for either centralization or decentralization of authority, the most recent reforms are much more difficult to neatly categorize. As this chapter demonstrates, the debate surrounding the proper management of public higher education is an enduring one, even after over 200 years of collective history upon which to draw.

Chapter 3 reviews the extant literature regarding state management of public higher education. It frames the discussion within the context of the classic principal-agent framework which, at its most basic conception, defines the autonomy versus accountability debate that states face in managing public higher education. Reviewing the descriptive literature through which the widely utilized categorizations of state governance structures have been defined, finding that while much agreement regarding these categorizations exists, recent governance changes largely work within these categorizations, limiting their empirical usefulness. Closing with a review of the sparse literature which connects governance structure to system characteristics finding that, while a limited literature exists that connects governance characteristics and institutional inputs, nearly no research has attempted to link governance arrangements to institutional performance in terms of outputs produced.

Chapter 4 explores the antecedents of higher education governance decentralization. The extant literature has focused almost exclusively on the role of the political process as a driver of higher education governance change, providing rich qualitative case studies of the influence of politics in the formulation of higher education policies. Drawing on Kingdon's (2003) multiple streams framework, this analysis argues that this literature has provided an incomplete picture of policy change. Utilizing hazard modeling, I find that state economic conditions, which have been largely ignored by the literature, emerge as strong predictors of state decentralization of higher education governance. Specifically, all else constant, I find that states with greater tax efforts are much less likely to decentralize while states experiencing tax revenue declines are much more likely to adopt decentralization. Given the current economic conditions facing the majority of states, this finding implies that we should expect to see more states enact legislation enhancing institutional autonomy and decreasing state control in the near future. What are the implications of this finding for system performance? To date, the paucity of the empirical literature connecting governance structure to institutional outputs and outcomes leaves this question largely unanswered.

Chapter 5, the second empirical chapter, attempts to answer this question by connecting the environment in which an institution operates with one critical measure of institutional output: student degree completion rates. Historically, state intervention into the provision of public higher education has been justified as a way to not only protect access for traditionally underserved groups but also as a mechanism for enhancing system efficiency through inter-institutional coordination. However, this argument largely discounts another potential source for enhancing system efficiency: inter-institutional competition. Consistent with a large body of literature in economics, Chapter 5 finds that institutions operating in more competitive states have higher institutional graduation rates than those subjected to less competition, all else equal. This finding suggests that, while some benefits are realized by state intervention into public higher education, the positive effects in this regard can be negated by overly stringent controls.

Policy Discussion

The findings of this dissertation inform ongoing policy debates regarding the appropriate relationship between states and public institutions of higher education and the impact of these interrelationships on system performance. These findings are of particular importance to inform policy makers across states as they struggle to reconcile large, structural budget deficits with increased public demand for higher education as well as entitlement programs such as Medicaid, Temporary Assistance to Needy Families (TANF), and unemployment benefits, which historically have crowded out state spending for higher education (Doyle & Delaney, 2009).

This research suggests that, if trends hold, we should expect to see a wave of decentralization of higher education governance in response to broadly declining economic conditions across states. However, as the second empirical chapter demonstrates, decentralization may be inherently negative for the students enrolled at public institutions of higher education; conversely, if decentralization increases inter-institutional competition, there is much reason to suspect that students could benefit, at least in terms of degree completion. However, decentralization is not a panacea—this research shows that too much decentralization has consequences which are as negative as too little decentralization. Further, researchers have long worried about the consequences of deregulation of higher education in terms of access and affordability for traditionally underserved groups and minorities, issues that remain unanswered by this dissertation. Ultimately, state efforts in this regard must seek to strike a balance between regulation and market mechanisms for enhancing the efficiency and effectiveness of our system of public higher education if it is to remain a driver of economic development moving forward.

Limitations and Future Research

There are several key limitations to this dissertation that suggest particularly fruitful avenues for further research. First, both empirical chapters rely heavily on the categorizations of state higher education governance structures originally published by

Paltridge (1965) and Berdahl (1971) and maintained by the Education Commission of the States. While this categorization's usefulness is demonstrated by its widespread use in the extant literature, much nuance in terms of the specific delegation of authority is missed by these categorizations, especially across the various types of coordinating boards. Future research would benefit from a more nuanced analysis of governance structures that draws on the delegation of specific authority and power which is germane to the research question at hand. As an example, consider state policy regarding tuition setting. While tuition-setting authority is generally delegated consistently across governance structures, this is not always the case: Kentucky's relatively weak coordinating board enjoys tuition-setting authority, as does the coordinating board of Oklahoma. Additionally, a few states, such as Florida, a governing board state, and Louisiana, a strong coordinating board state, have enacted direct or indirect legislative control over tuition setting. As one might imagine, any analysis that utilizes the broad categorizations of governance structures to analyze tuition policies could potentially identify spurious relationships due to these inconsistencies. As researchers delve more deeply into the nuances of higher education governance structures, these limitations can be overcome to the benefit of both academics in the pursuit of knowledge as well as practitioners who utilize scholarly research to inform policy.

A second important limitation to this dissertation is its reliance on statutory or constitutional definitions of the relationship between institutions and states, which may or may not accurately reflect the state-institution relationship as it actually exists in practice. As the rich case study literature regarding higher education governance attests, in many states differences exist between the *de jure* and *de facto* balance of power between states and institutions, the latter of which involves unwritten norms, rules, and traditions as well as the social and political capital of the actors involved—all of which are difficult to accurately measure for the purposes of quantitative analysis. This speaks to the importance of mixed methods approaches to the study of higher education governance, which allows researchers to continue to build on the foundations

established by the extant literature and further explore the interrelationships as they exist across states.

APPENDIX I:

IPEDS EXPENDITURE CATEGORY DEFINITIONS

Instruction

Expenditures of the colleges, schools, departments, and other instructional divisions of the institution and expenditures for departmental research and public service that are not separately budgeted. Includes expenditures for credit and noncredit activities.

Excludes expenditures for academic administration where the primary function is administration (e.g., academic deans). Also includes general academic instruction, occupational and vocational instruction, special session instruction, community education, preparatory and adult basic education, and remedial and tutorial instruction conducted by the teaching faculty for the institution's students.

Research

Funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. Does not include non-research expenditures (e.g., training).

Public service

Funds budgeted specifically for public service and expended for activities established primarily to provide non-instructional services beneficial to groups external to the institution. Examples are seminars and projects provided to particular sectors of the community and expenditures for community services and cooperative extension services.

Academic support

Expenditures for the support services that are an integral part of the institution's primary mission of instruction, research, or public service. Includes expenditures for libraries, museums, galleries, audiovisual services, academic computing support, ancillary support, academic administration, personnel development, and course and

curriculum development. Also includes expenditures for veterinary and dental clinics if their primary purpose is to support the institutional program.

Student services

Funds expended for admissions, registrar activities, and activities whose primary purpose is to contribute to students' emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program. Examples are career guidance, counseling, financial aid administration, and student health services (except when operated as a self-supporting auxiliary enterprise).

Institutional support

Expenditures for the day-to-day operational support of the institution. Includes expenditures for general administrative services, executive direction and planning, legal and fiscal operations, and public relations and development. Excludes expenditures for physical plant operations.

Operation and maintenance of plant

Expenditures for operations established to provide service and maintenance related to campus grounds and facilities used for educational and general purposes. Specific expenditures include expenditures for utilities, fire protection, property insurance, and similar items. Excludes expenditures made from the institutional plant fund accounts.

Scholarships and fellowships

Expenditures made in the form of outright grants-in-aid, tuition and fee waivers, prizes and trainee stipends to individuals enrolled in formal undergraduate or graduate coursework, either for credit or noncredit. Includes Pell grants and aid to students in the form of tuition or fee remissions. Excludes those remissions that are granted because of faculty or staff status, or for which services to the institution must be rendered, such as payment for teaching, or student loans. Also excludes College Work-Study Program expenses.

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EDUCATION

- Ph.D. in Public Policy and Administration (in progress), Martin School of Public Policy and Administration, University of Kentucky. Dissertation Committee: Dr. Eugenia Toma (chair), Dr. Merl Hackbart, Dr. J.S. Butler, and Dr. John Thelin
- Dissertation Title: Public Higher Education Governance: An Empirical Examination
- Master of Political Science, University of Louisville, 2005
- Bachelor of Arts in Political Science, University of Kentucky, 2003

RESEARCH AND TEACHING INTERESTS

Research Interests include: higher education policy and finance; public budgeting and financial management; K-12 policy and finance; quantitative research methods

Teaching Interests include: higher education finance; education policy; public and nonprofit budgeting and financial management; quantitative research methods

PUBLICATIONS AND REPORTS

- “School Finance Reform: Do Equalized Expenditures Imply Equalized Teacher Salaries?” (with Meg Streams, J.S. Butler, Joshua Cowen and Eugenia Toma). Revise and resubmit at *Education Finance and Policy*.
- “Accounting for Natural Disasters: The Impact of Earthquake Risk on California Municipal Bond Pricing.” with Gao Liu and Cezar Brian Mamaril, *Public Budgeting and Finance*, 29(1): 68-83.
- “Higher Education Policy Profiles” with Kelli Parmley and Takeshi Yanaguira. State Higher Education Executive Officers (SHEEO): July, 2007.
- “Offshore Outsourcing of Kentucky State Government Services: Direct Contracting Is Limited but the Amount of Subcontracting Is Unknown” with Greg Hager, Wayne Linscott and Jonathan Roenker (Legislative Research Commission Research Report 325).
- “Kentucky Can Improve the Coordination of Protective Services for Elderly and Other Vulnerable Adults” with Greg Hager, Cindy Upton, Lynn Aubrey, Kara Daniel, Rick Graycarek, Van Knowles, and Erin McNees (Legislative Research Commission Research Report 237).

CONFERENCE PAPERS AND PRESENTATIONS

- “State Decentralization of Higher Education Governance: A Hazard Model Approach.” Presented at the annual meeting of the American Education Finance Association. Richmond, VA: March, 2010.
- “Teacher Mobility in Rural and non-rural Schools: The Impact of Statewide Finance Reform in Kentucky” with Joshua Cowen (presenting), Eugenia Toma, Megan Streams and JS Butler. Presented at the annual meeting of the American Education Finance Association. Richmond, VA: March, 2010.
- “Teacher Characteristics and Statewide Education Reform: The Case of Kentucky” with Eugenia Toma (presenting), Megan Streams, JS Butler, and Joshua Cowen. Presented at the annual meeting of the Association for Public Policy Analysis and Management. Washington, DC: November, 2009.
- “New York State Fiscal Institutions and Municipal Borrowing Costs: Do Debt and Taxation Limits Really Impact Capital Costs?” with Gao Liu (presenting) and Wie Yusuf. Presented at the annual meeting of the Association for Budgeting and Financial Management. Washington, DC: September, 2009.
- “Teacher Career Trajectories in Urban and Rural Kentucky: The Impact of the Kentucky Education Reform Act” with Megan Streams (presenting) and Eugenia Toma. Presented at the annual meeting of the American Education Finance Association. Nashville, Tennessee: March, 2009.
- “Basic Conditions in the Market for Higher Education and the Tuition-Setting Process.” Presented at the annual meeting of the Association for the Study of Higher Education. Jacksonville, Florida: November 2008.
- “Linking Institutional Expenditures to Student Success: An Analysis of Public Institutions of Higher Education.” Presented at the annual meeting of the Association for Budgeting and Financial Management. Chicago, Illinois: October 2008.
- “The State of Higher Education Finance in Fiscal 2006” with Kelli Parmley and Takeshi Yanaguira. Presented at the annual meeting of the Northeast Association for Institutional Research. New Brunswick, New Jersey: November 2007.
- “Natural Disaster Risk and Municipal Bond Pricing in California” (presenting) with Gao Liu and Cezar Mamaril. Presented at the annual meeting of the Association for Budgeting and Financial Management. Washington, DC: October 2007.
- “Public Participation and the Power of Information” (presenting) with Wie Yusuf and Lenahan O’Connell. Presented at the Midwest Political Science Association annual meeting in Chicago, Illinois: April 2007.

WORKING PAPERS

- "State Fiscal Constraints on Local Government Borrowing: Effects on Scale and Cost" (with Wie Yusuf, Gao Liu and Cleopatra Grizzle) in Jonathan Justice, Helisse Levine, and Eric Scorsone (eds.), *Handbook of Fiscal Health* (Jones and Bartlett, forthcoming).
- "Teacher Employment Patterns in Rural Kentucky: A Political Economy Perspective" (with Eugenia Toma, J.S. Butler, Joshua Cowen and Meg Streams).
- "Predicting Institutional School-as-Lender Participation: An Analysis of Decision Making in Higher Education".
- "New York State Fiscal Institutions and Municipal Borrowing Costs: Do Debt and Taxation Limits Really Impact Capital Costs?" (with Gao Liu and Wie Yusuf)
- "Gaining Public Acceptance for Transportation Finance Policy Solutions" (with Wie Yusuf and Lenahan O'Connell).

TEACHING EXPERIENCE

- Instructor, POLS 390: Political Science Research Methods. University of Louisville (Summer, 2006).
- Graduate Teaching Assistant to Dr. Phillip Laemmle, Political Science Department, University of Louisville (August, 2003 to May, 2005).

PROFESSIONAL EXPERIENCE AND PUBLIC SERVICE

- Graduate Research Assistant, Spencer Foundation Grant #201000055: "Teaching Careers in Rural Schools: School Finance Reform and Teacher Recruitment and Retention". Eugenia Toma, Principal Investigator (August, 2009 to present).
- Student Advisory Committee Member, Governor Steve Beshear's Workgroup on Higher Education (October, 2008 to present).
- Graduate Research Assistant to Eugenia Toma, James W. Martin School of Public Policy and Administration, University of Kentucky (August, 2007 to August, 2009).
- Policy Fellow, State Higher Education Executive Officers, Boulder, Colorado (May, 2007 to August, 2007).
- Graduate Fellow, Program Review Committee of the Kentucky Legislative Research Commission, Frankfort, Kentucky (January 2002 to June 2003).

ACADEMIC AWARDS AND HONORS

- Pi Alpha Alpha Best Doctoral Student Manuscript Award, National Association of Schools of Public Affairs and Administration (October, 2008).

- Association for the Study of Higher Education Graduate Student Policy Seminar Participant (November, 2007).
- Kentucky Opportunity Graduate Fellowship (August, 2005 to August, 2007).
- Israel Naamani Award for outstanding service to the political science department, University of Louisville (2005).
- Dean's List, University of Kentucky (1997 to 1998).
- Honors Program, University of Kentucky (1997 to 2001).

PROFESSIONAL MEMBERSHIPS

- Association for the Study of Higher Education
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- American Education Finance Association
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